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DR. WILLIAM PEPPER: AN APPRECIATION*

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Detroit.

Among all the men whose names adorn the annals of the medical profession in America, there has been none greater than William Pepper, of Philadelphia. As an example of the power of a personality and the influence of one man's life upon a great university, a great city, and a great state, the history of our times can narrate nothing more striking.

The story of his life must prove an inspiration to every man who ardently desires to make the most of life's opportunities. William Pepper was great in three separate and distinct fields of action: as a physician, as an educator, and as a public-spirited citizen. His accomplishments in these three separate fields of activity will be briefly considered.

Like many other famous physicians, he was born into the profession. His father, William Pepper, known as "the elder Pepper," was one of that brilliant group of young Americans who studied under Louis in Paris, with Oliver Wendell Holmes, Jackson, Bowditch, and Waterhouse. The elder Pepper was for many years recognized as the chief consultant in internal medicine in Phila-

delphia and held the professorship in Theory and Practice of Medicine in the University of Pennsylvania from 1860 to 1864, when he died. His early death at the age of 55 years was greatly deplored. The cause of his death, as well as that of several other immediate members of his family, was tuberculosis.

William Pepper's grandfather was a contemporary of Stephen Girard, and with him one of the most wealthy and influential citizens of Philadelphia. He founded the Pepper fortune which has contributed several million dollars to public bequests in Philadelphia. The paternal ancestry was German, the founder of the American branch of the family emigrating from Strassburg. Dr. Pepper's mother was a member of an old and honored Delaware family of English descent, so that he was born a gentleman of wealth and social distinction with a family inheritance of public spirit and high scholarship.

Born in 1843, he entered the academic school of the University of Pennsylvania in 1858 at the age of 15 years, and graduated in 1862, president and second in scholarship in his class. He was a member of Phi Beta Kappa and Zeta Psi. The university had then about seven

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hundred students, of whom more than half were in the medical school, the sole distinction of the university. The academic school gave a training but little in advance of the modern high school. In the same year, 1862, he entered the medical school and graduated two years later, in 1864. Among his teachers were his father, Joseph Leidy, Samuel Jackson and D. Hayes Agnew. His father died a few months later. At the age of 21, then, Dr. William Pepper found himself with a rather meagre technical equipment ready to begin his career as a practitioner. He never knew the fear of poverty or necessity as an aid to ambition, but in spite of this, he neglected none of the notable opportunities which came to him. He received many and distinguished honors in his day, but the narration of his life is not of honors received, but of great services rendered at the cost of infinite pains and incessant toil. Titles, offices, and distinctions were to him but other terms for opportunity to further the great objects which were constantly before him.

His first appointment, soon after graduating, was to fill a vacancy as pharmacist to the Pennsylvania Hospital. His eagerness to work and to seize every opportunity to advance himself in his chosen profession is shown by his prompt acceptance of this humble post which might easily have been passed disdainfully by a wealthy young man just graduated from the largest and most famous medical school in the country. However, he performed his duties so satisfactorily that he was shortly after appointed a physician to the Out-Patient Dispensary of the hospital. Thus began a long list of official appointments as physician and teacher. He was next resident physician, that is, an interne in the Pennsylvania Hospital. In 1865 he had typhus fever. In 1866 he was made pathologist to the hospital and later assigned a room in which to give lectures

on Pathological Anatomy. In the same year he was appointed visiting physician to the Philadelphia Hospital, a distinguished honor for so young a man, and shortly after he succeeded D. Hayes Agnew as Curator of the Pennsylvania Hospital. During his incumbency of this office he catalogued all the specimens in the pathological museum of the hospital. This was no small task, as the published catalogue contained 138 pages. After these five years, filled with charitable medical work and close study of the science of his profession, came his first university appointment. He was made lecturer on morbid anatomy at a salary of one hundred dollars.

Shortly after this he was appointed attending physician to the Children's Hospital. In 1868 he was appointed lecturer on clinical medicine in the university at a salary of four hundred dollars per year. The elder Gross in writing a congratulatory letter to Dr. Pepper apropos of this appointment said, among other pleasant things, "No higher compliment was ever bestowed upon a young physician on this continent." Later he gave in addition the course on Physical Diagnosis. He also served some time as editor of the Medical Times and spent a summer abroad visiting many famous hospitals.

The buildings of the University at this time were located in the eastern and older part of the city of Philadelphia, where they were already becoming crowded, and additional space was limited and expensive. It was proposed that the university be moved to West Philadelphia. Many of the members of the medical faculty were opposed to the change, but the younger element, led by Pepper, were enthusiastic for it. The old quarters were certainly antiquated. The serious difficulty in the way of removing the medical school was the question of the hospital. At this time no medical school in America possessed a

hospital as part of its equipment. The University had obtained the privileges of instruction in municipal and private institutions. It was an entirely new departure in this country to advocate the founding of a great hospital primarily for teaching purposes and the care of charity patients. Yet the obvious solution of the moving problem for the university was the erection in the new locality of a university hospital, and this plan was enthusiastically supported by William Pepper. On Dec. 30th, 1870, he responded to the toast "The Medical Department" at the annual dinner of the Alumni of the University. In this address he showed evidence of having given careful thought not only to the affair of the medical school but to the university as a whole. He championed the removal of the university, the building of a university hospital and a complete reform in the general management. No doubt these plans, involving as they did the raising of a then enormous sum of money and the upsetting of time-honored precedent, seemed to many of his older hearers visionary. However, six months later the project to raise funds to build a University Hospital was under way. Joint committees of the alumni and faculty met, decided to make the effort and appointed a sub-committee of three to direct the active work of the campaign. Of this committee Dr. William Pepper was appointed chairman. Thus at the age of 27 years with his active professional career just beginning, we find this man placed at the helm in the most momentous effort of the day in his native city and for his alma mater. Here began the extraordinary life activity of the man. From this time forward until his death he carried on his remarkable medical career day by day, and at the same time achieved the most remarkable success as an organizer and builder of a university and a modern city. To this part of his career we shall return

later.

Dr. Pepper's contributions to medical literature were many and valuable. While a complete list of his publications would be perhaps wearisome, one can hardly get a better idea of the tremendous activity of the man than by noticing some of his more important works. In 1866, while resident physician in the Pennsylvania Hospital he published with Drs. Rhoades and Meigs a paper on "The Morphological Changes of the Blood in Malarial Fever." He describes circumscribed pigment deposits which we now know may very well have been the malarial plasmodium. His first hospital report was on the "Fluorescence of Tissues." The lectures on Morbid Anatomy with which his career as a university teacher opened, were published in 1870. His lectures on Clinical Medicine from 1870 to 1876 were reported and published. One of his earliest papers published in 1869 in the *American Journal of the Medical Sciences* was on "Phosphorus Poisoning and Fatty Degeneration." I mention the date especially so that it may be realized how far in advance of modern cellular pathology these keen observations were made.

In 1870 appeared Meigs and Pepper's "Diseases of Children," a large volume which passed through eight editions and was long the standard American text on this branch. Other topics on which he wrote at this time, several of them for the *American Journal of the Medical Sciences*, were "Tracheotomy in Chronic Laryngitis," "Cystic Disease of the Pancreas," "Progressive Muscular Sclerosis," "Sclerosis of the Legs and Feet with Anesthesia and Ataxia," "Scirrhus Pylori," and "Emphysema of the Neck." In 1874 appeared a brilliant bit of work on "Local Treatment of Pulmonary Cavities by Injection Through the Chest Wall." Other papers that year were "Case of Hydrothorax in which Paracentesis was Performed," "Treatment of

Collapse in Cholera," "Rupture of the Aortic Valve," "Chronic Pericarditis," "Operative Treatment of Pleural Effusion." In 1875 he published in the *American Journal of the Medical Sciences* a paper on "Progressive Pernicious Anemia," in which appears, I believe, the first description of the involvement of the bone marrow in this important disease. He delivered in this same year the annual address in medicine before the State Medical Society, and read a very important paper on "Sanitary Relations of Hospitals" before the American Public Health Association. Papers on "Encysted Dropsy of the Abdomen," "Retropharyngeal Abscess," and "Cheyne Stokes Respiration in Tubercular Meningitis" appeared about this time. He was elected Professor of Clinical Medicine in the University in 1876, the position which his father had vacated twelve years before. At this time also began his interest and activity in the question of educational museums for the city of Philadelphia. He was chairman of the committee to organize an art museum, patterned after that in South Kensington, London.

On November 26th, 1875, Dr. Pepper was appointed Medical Director of the great Centennial Exhibition to be held in Philadelphia in 1876. He had under him a staff of six medical officers, and a resident physician. The problems were new and both numerous and perplexing. He was general adviser on sanitary questions, and he was obliged to issue authoritative information on the hygienic condition of Philadelphia. The pamphlet which he wrote was widely distributed and reprinted both in this country and in Europe. A model hospital was erected on the grounds. The success of the medical service was marked. The Exposition lasted nearly six months and was attended by over ten million visitors. Sixty-five hundred patients were received into the Exposition Hospital, and

four died—two with apoplexy and two with valvular disease of the heart. There was much illness among the foreigners resident on the exposition grounds, but none died. It is said that never before did so vast an assemblage meet and disperse on such an occasion with so few disasters. The British Government formally recognized and expressed appreciation of the excellence of the service of the medical staff. The King of Norway and Sweden knighted Dr. Pepper for his achievements in this position. During this summer he also acted as chairman of the local Committee of Arrangements for the Philadelphia meeting of the American Medical Association.

His services in the Medical Directorship of the Centennial were widely recognized as evidence of extraordinary executive ability. His name had now become very familiar to the people of Philadelphia and to many thousands in other parts of the country. The result was a great and sudden increase in his consulting practice which now became extensive and exacting. The activity of his mind and pen, however, continued. We find a paper on "Addison's Disease" published in January, 1877, and shortly after he made the first description in medical literature of the blue line on the gums in argyria. The full title of this paper was "The Administration of Nitrate of Silver and the Occurrence of a Blue Line as the First Sign of Argyria." During this same year he increased his University work by a course of lectures on pathology. Of most importance during this year, however, was the oration which he delivered at the formal opening of the medical school in October. The title of this address was "Higher Medical Education, the True Interest of the Public and of the Profession." He had gathered a great mass of information about medical education abroad. He describes minutely the status of American medical schools in 1876. Compared with

the conditions twenty-five years later, they seem startling. Inefficiency and make-shifts were the order of the day. The evils of the system were widespread and deep-rooted. The method of correction was the theme of this address, which was widely read and copied and undoubtedly had immense influence in the progress of the next few years. All his days Dr. Pepper fought for a higher standard of medical education and few men have influenced it more.

In 1876 a successful case of "Paracentesis of the Pericardium" was published. "Aneurysm of the Thoracic Aorta with Unusual Physical Signs" followed. Other papers appearing about this time were "Catarrhal Jaundice with Special Reference to the Internal Use of Nitrate of Silver," "Functional and Organic Anemias," "Koumyss," "Clinical Study of Exophthalmic Goitre," "Sanitary and Mineral Waters," an exhaustive report made to the American Medical Association, "Treatment of Asthma," "Treatment of Chronic Rheumatism," "Administration of Phosphoric Acid." In 1881 Dr. Pepper was Chairman of the section on medicine of the American Medical Association. The winter before he organized the Charity Ball, a social function which continues to this day to make an annual gift to the medical charities of Philadelphia. In 1883, the University Hospital received \$12,500 from this one ball. In the year 1881 he also began work on Pepper's System of Medicine by American Authors, one of the most successful of medical publications.

One of the most important of his articles appeared in 1883 entitled "A Contribution to the Clinical Study of Typhlitis and Perityphlitis." In it he first called attention to the frequent recurrence of appendicitis. While the indications for operation were not yet definitely worked out, the following sentences show how keen was his appreciation of the proper line of treatment to be fol-

lowed. He said (quoted by Tyson), "The operation is so simple, and when properly performed so free from danger and complications, that it is to be hoped that hereafter the indications for its performance will be more clearly recognized and more constantly borne in mind, not by surgeons only, but by the general practitioners under whose care such cases come, and by whom the necessity for the operation must be recognized. It is not too much to say that the unjustifiable delay permitted in many cases of Typhlitis, while waiting for the more definite detection of suppuration, is the cause of many avoidable deaths." Others of his best known papers were "The Climatological Study of Phthisis in Pennsylvania" and "Cardiocentesis."

In 1892 Dr. Pepper edited the department of medicine, surgery and collateral science in Johnson's Cyclopaedia. In 1893 appeared the first volume of his textbook of medicine by American Teachers. This, also, was immediately and widely successful both in England and this country. The total list of his addresses and contributions including one on "Daniel Drake," which he delivered in Detroit in 1895 before a meeting of the Mississippi Valley Medical Association, numbers about one hundred and seventy.

Dr. Pepper in addition to many other professional honors acted as President of the First Pan-American Medical Congress, which met in Washington in 1893. The great success of this meeting was largely due to Dr. Pepper's herculean efforts. His Presidential address before the Congress was one of his best efforts. Indeed, Osler declared that Pepper's greatest works were really the address on Higher Medical Education, which has already been mentioned, and this one. They have undoubtedly played a great part in professional progress in this country. At the second Congress, which met in Mexico, he was greatly lionized, and after his death a public memorial

service was held for him in the City of Mexico, attended by President Diaz and all his cabinet. Dr. Pepper was a Charter member and early President of the Association of American Physicians, and also of the American Climatological Society.

In 1881 Dr. Pepper was elected Provost of the University of Pennsylvania, and from that time on he wrote many educational papers and addresses not at all medical. His success as the organizer, builder and executive head of a great university was no less distinguished than his professional career. In brief, it may be said that during the thirteen years of Dr. Pepper's provostship (1881-1894) the attendance at the University increased from 981 to 2,180, representing every state in the Union and 38 foreign countries. In 1881 its property was valued at \$1,600,000 and included fifteen acres of land; in 1894 it was \$5,000,000 and fifty-two acres were controlled. Not a single large gift had ever been made to the school before his time, but in 1894 the gifts aggregated over \$1,000,000.00 When Dr. Pepper began, the University had a debt of \$450,000. This was paid.

As Provost he established the following University departments: The Wharton School of Finance and Economy; the Biological Department; the Department of Philosophy; the Veterinary Department; the Training School for Nurses; the Department of Physical Education; the Department of Paleontology and Archeology; the University Library; the Graduate Department for Women; the Department of Hygiene; the Department of Architecture; the Wistar Institute of Anatomy and Biology; the William Pepper Laboratory of Clinical Medicine.

We have already seen how at the age of 27 years (in 1871) he had been placed in charge of raising funds for a University Hospital. A short account of the

methods by which he succeeded in this endeavor will give us an insight into the way he accomplished so much in a short time.

Dr. Pepper began his campaign by writing an appeal for the funds, basing it on the grounds that it was needed for the purposes of medical education; that the city needed the increased hospital accommodation, and that the community would benefit materially from the students who would be attracted. It was thoroughly and well done. The appeal was signed by 109 of the leading citizens of Philadelphia. He next began a campaign to secure funds from the Legislature. The public treasury had never before been appealed to for a hospital. The sensation was new. Meanwhile \$140,000 had been subscribed in Philadelphia. Every medical alumnus of the University in the State was requested to use his influence with his local representatives in the Legislature. The result was an appropriation of \$100,000 on condition that \$250,000 more be raised, the whole sum of \$350,000 to be devoted to the purposes of the hospital. Dr. Pepper thereupon caused a letter of thanks to be presented to each member of the Legislature. This letter was signed by the Philadelphia Committee—about twenty of the most prominent men in the city. The next move was to secure a grant of land on which to place the hospital. For this purpose the city council must be sought. Pepper's diplomatic hand guided the matter through, and five and a half acres of public land were given to the University authorities on condition that fifty free beds for the use of the poor of the city should always be maintained. Dr. Pepper personally solicited money from wealthy individuals and corporations. He wrote innumerable letters and made many calls. He issued a special appeal in 1872 to the lawyers of the city and State, asking them to advise clients in making wills to include the

hospital in their charity bequests. The result of this one appeal has been very large, and bequests have still been coming very recently as a result of Dr. Pepper's letter over thirty years ago.

The effort was so successful that by November, 1872, the \$250,000 had been raised, making the State appropriation available. The whole thing, without precedent in the city's annals, had been done in eighteen months. However, Dr. Pepper now saw that to maintain such a hospital properly a larger endowment would be necessary. The Legislature was again appealed to. After two months of most strenuous campaigning, including bringing the whole Legislature bodily to Philadelphia to view the University, a second grant of \$100,000 was made. Dr. Pepper was then appointed chairman of the building committee and personally superintended the details of building, even the stone-mason contracts being in his own hand-writing. In all, Dr. Pepper raised by personal effort for the hospital during his life \$560,000 in cash besides the land and many indirect gifts and bequests. In soliciting money he worked hard and systematically. In his later days as Provost he kept a card catalog of all the graduates and friends of the University. Scouts were always out getting information for these cards. From them he knew a man's name, reputation, religion, wife, relations, hobbies, business, wealth and how invested. When he sought a gift he constructed his appeal skilfully to the man and the occasion. His letter files tell how versatile was his attack. In the course of his public career he raised over ten million dollars and secured gifts of over one hundred acres of land in what is now the heart of the City of Philadelphia. To this he added a personal gift of over \$500,000 earned in a most exacting profession. He may well be called a Prince of Beggars.

As Provost of the University he not

only raised money but effectually guided the educational aims of the institution. He established formal relations between the University and the Philadelphia public schools. He had found the University a weak, poor, ununified group of schools in much the same condition as sixty years before. In thirteen years he left it one of the greatest of modern universities, thoroughly abreast of the times and in touch with its people. Moreover, he had given it such a momentum that when he retired its progress continued. Time forbids the narration of the many distinguished honors which came to Dr. Pepper in recognition of his great services to education.

Before Dr. Pepper's retirement from the head of the University he had become very enthusiastic about plans for a public library for the city of Philadelphia. He finally undertook the leadership of this movement.

When he began, the library was housed in one room and had two attendants. In eight years there were one hundred and sixty attendants, managing a system composed of a great central library and fourteen branches, which gave out more volumes in that year than any other library in the whole world. Such was the magic influence of Dr. Pepper's genius and hard work! A similar narrative might be told of the Museum of Science and Art and the Philadelphia Commercial Museums. These institutions represent an enormous amount of labor both in their establishment and in the gathering of their collections. In both of these tasks Dr. Pepper was not only interested but was the leader through all their crucial years. These museums are among the finest in the world.

Dr. Pepper founded the William Pepper Memorial Clinical Laboratory as a memorial to his father, but it remains also a memorial to himself. He gave \$50,000 and secured gifts amounting in

all to about \$300,000. To us who claim him as a member of the medical profession, for so long as he lived he was first of all a physician, it seems, as Dr. John S. Billings said, that "this far-seeing, bold-planning man of the silver tongue, and the open hand, will be remembered as the founder of the first distinctive laboratory for research in clinical medicine in this country so long as sickness and death are among the children of men."

The most interesting part of this narrative, dealing with his personality and methods of work, has been reserved for the conclusion. We have seen how this man carried on the largest consultation practice in the country and made many and notable contributions to medical literature, besides occupying for thirty years a chair in one of the greatest medical schools; how at the same time he was Provost of the University of Pennsylvania, transforming it in thirteen years from a small, local institution to a great national university, building for it during this time twenty magnificent buildings and adding to its property forty acres of land in the heart of the city of Philadelphia; and how, finally, with almost equal effort, he caused to be erected and perfected in probably the shortest time such a thing was ever done a great free public library system and a group of educational museums, scarcely equaled in the world. Perhaps a greater service than all these was the uplifting of the public mind of Philadelphia on the questions of public service, education, and ideals of life. Seldom is it vouchsafed to any man to accomplish and bring to fruition in his lifetime such labors as did William Pepper. Contemporary of many distinguished physicians, surgeons, and men of affairs in his native city, among them all he moved rapidly and easily to the first place. Such tasks were accomplished with the greatest labor and difficulty, and at the cost of

personal aims and comfort.

Dr. Pepper was born a gentleman of wealth and leisure, but he was never a snob, and his charm of manner extended to all with whom he came in contact. He was thrown much with railroad men and his considerate treatment of them was shown by his election as an honorary member of the American Brotherhood of Passenger Conductors. These qualities of tact and sympathy and understanding enabled him, with his unquenchable enthusiasm and optimism, to appeal successfully to all classes of men, and no man was too obscure to receive Dr. Pepper's personal attention if he could serve the cause. We have seen how he raised his first money for the University Hospital. He made elaborate preparations against defeat,—when success came he took it as a matter of which he had never a doubt.

Many interesting tales are told of his persuasive powers with reluctant givers. A wealthy man of Philadelphia, Mr. Gibson, subscribed \$10,000 for one of Mr. Pepper's institutions. Later he remarked to a friend that Dr. Pepper's plea was so effective that if the appeal had been for \$50,000 he could not have refused. This came to Dr. Pepper's ears and in a few weeks he had visited Mr. Gibson again, this time taking away with him the subscription for \$50,000.

Dr. Pepper's workday was nineteen hours. Not infrequently under stress he went thirty-six to forty-eight hours without going to bed. He kept four stenographers and a special corps of messenger boys busy. Two stenographers worked only at night, and the most rapid and intense work was usually done between 10 p. m. and 2 a. m. Dictation began with breakfast or before, and one of his stenographers ordinarily accompanied him at all times, taking dictation in the carriage, on the train, or waiting in the station. He attended an unbelievable number of dinners, committee meetings and social

functions of various sorts. Yet they all aided his main purpose. He counted that function a failure which did not bring him a valuable acquaintance or idea. One lady tells of attending a theater party given by Dr. and Mrs. Pepper. Soon after the play began, the Doctor excused himself, returning in a half hour. Shortly he left again and returned. Before the close of the play he was called out a third time, but joined the party at supper. Later, she learned that Dr. Pepper had that evening delivered two formal addresses, one to a class of nurses, and his third retirement was for a consultation.

In spite of this pressure and his ability to command large fees, few men did more medical charity than he. Next to physicians' families, teachers were the objects of his bounty. Any poor school-teacher who came sick to Dr. Pepper could be sure of his best attention and no bill for his services was ever sent. His best known service of this kind was during the last illness of General Sheridan, who was taken sick May, 1888. Dr. Pepper's diary is interesting. The date is July 5th:

"Up at 6:00 a. m.—Bath—breakfast—in office at seven—consultation in office continually until 4:30 p. m., with exception of a committee from Johns Hopkins on organization of hospital from 11:00 to 12:00 and meeting of the Board of Trustees from 12:00 to 1:30—train to Sea Girt 5:00 p. m. Drove to Asbury Park to meet Dr. Wilder in the case of Hon. H. B. Denman at 9:00 p. m.—(paracentesis abdomini)—found telegram calling me to see General Sheridan, then at Delaware Breakwater on a man-of-war, Swartaro. Wired to have a special train sent from Philadelphia to Asbury Park at 11, and wired to have tender at Cape May, twelve miles across the bay to Delaware Breakwater at 3:00 a. m. Started from Asbury at 11:10, reached Camden 1:30, then to Cape May,

ninety miles, 3:30—drove three miles to Cape May Point at 4:00 a. m.—no boat—misunderstanding—back to Cape May—awakened telegraph operator, wired via Philadelphia to send tender at once—dress—breakfast—drove out again, tender there at 6—reached steamer at 7:15—consultation—Sheridan much confused in mind, but recognized me—showed pleasure—left at 8:30—Cape May 9:45; special train off at 10:00, in Philadelphia at 12:30. Consultation until 2:00 p. m., train to New York and 6:30 to Westport—arrived 4:00 a. m., and drove home by East Hill, thirty miles."

General Sheridan was removed to his home in Washington and was visited regularly by Dr. Pepper. The Pennsylvania Railroad during this time made up a "special" for him, consisting of a common traveling coach, which was weighed down at each end with piles of steel rails, thus insuring steadiness. Dr. Pepper was accustomed to board the car at Broad Street Station about 11:00 o'clock in the evening; the road was cleared to Washington and in four hours he was at the bedside of his patient. After the consultation he was brought back in the same train, arriving about 8:00 o'clock in the morning in time to take up the duties of the day. This was kept up until August, when Sheridan died.

When asked for his bill, Dr. Pepper begged permission in a famous letter, to be allowed to present his services in acknowledgment of the patriotic debt owed to General Sheridan by all lovers of their country. He knew that General Sheridan's estate was very small.

One secret of Dr. Pepper's ability to sustain his long hours of work was what he called "muscular relaxation." When overtaken by fatigue whether in office or on train, he possessed the power to drop off to sleep. Many a patient in his consulting-room has been annoyed to have Dr. Pepper excuse himself, lie down on the sofa and in two minutes be asleep.

After five or ten minutes he would wake and renew his work with such interest, vigor and care, that criticism was utterly disarmed.

The last three years of Dr. Pepper's life, and they were among his most productive years, were plagued by almost continual discomfort and disease. Repeated influenza infections had reduced his strength. Protracted bronchitis kept him down for weeks, and finally the agonizing pains of angina pectoris came to haunt him. Yet he kept up a marvelous amount of work.

He died suddenly, July 28th, 1898, at the residence of Mrs. Hearst, in California, whence he had gone in search of renewed health. The following quotation from the autopsy record may be of interest:

"The valves of the heart were healthy, but the coronary arteries were in an advanced state of sclerosis with consequent disease of the myocardium. The right coronary was almost completely occluded at one point by an area of especially intense disease and by a partially organized thrombosis within. There was some

atheroma of the aorta and of the general arterial system throughout the body. The liver was highly sclerotic and the kidneys showed the effects of cardiac failure, being swollen and highly degenerated. The apex of the left lung was greatly puckered and retracted, and embedded in the fibrous tissue which caused the contraction were found several small cheesy foci. These were undoubtedly remains of the tuberculous infection from which he had suffered many years before, and which was thus evidently wholly cured. The arteries of the circle of Willis were sclerosed and calcified in a most remarkable manner. Several of the branches were almost completely occluded and none of them was seemingly of more than half its previous or normal caliber. There was no gross change in appearance in the cerebral substance. The brain was considerably above the average in size."

It seems not too much to say that Dr. Pepper was a truly great man. In him was produced a new type of physician and one of the highest types of citizenship yet seen in this country.

The Diagnosis of Lupus Vulgaris.—The diagnosis is ordinarily not difficult to one who has seen a good many of these cases, but occasionally it is not easy to differentiate it from the two diseases which it most resembles, syphilis and epithelioma. In making the diagnosis between these three affections, the age of the patient is frequently significant, lupus being nearly always a disease of early life, while both epithelioma and the late eruption of syphilis which looks like lupus, are more likely to be seen in those past middle life. Lupus is much slower in its progress than either syphilis or epithelioma, the lupus nodules are deeper, of a peculiarly translucent

appearance on pressure and readily break down; the ulcers of lupus are not so deep or so sharp-edged as those of syphilis. The discharge from lupus ulcers is much less in amount than that from syphilitic ulcers, and has not the offensive odor of the latter. The epitheliomatous ulcer is ordinarily a single lesion, with a hard, firm edge, very different in appearance from the nodular masses of lupus. We must remember, however, that epithelioma may develop on a long-standing patch of lupus. I have seen several instances of this. The finding of the tubercle bacillus and the reaction to tuberculin are positive diagnostic features.—Foster, *St. Paul Med. Jour.*, Nov., 1908.

THE PARATHYROIDS*

ANGUS McLEAN, M.D.,

Detroit.

In any attempt to describe the parathyroids anatomically or clinically it will be necessary to make frequent reference to the thyroid bodies to which they hold such a close anatomical relation, receiving their nerve and blood supply from the same source.

All the older anatomists gave full and accurate descriptions of the thyroids, but none of them mentioned the parathyroids; only anatomies revised or published in the last five or six years make any reference to the latter—and only physiologies of very recent date refer to their function.

While the thyroids have long been known to anatomists, nothing was known of their function until Schiff reported his experience in 1856. He showed that removal of the thyroids from dogs was soon followed by certain characteristic symptoms, such as muscular tremor, apathy, malnutrition, and finally death. He also demonstrated that these evil results following thyroidectomy could be obviated by grafting pieces of thyroid into the body. This knowledge was soon applied to human beings suffering from cretinism and myxedema. This soon led to the discovery of thyroid extract and its administration with many beneficial results. All this was done before parathyroids were known to exist.

Sandstrom, in 1880, gave the first anatomical and histological description of these structures, and eleven years later, 1891, Gley described their clinical importance. Since then a great number of

experiments have been made on dogs, rabbits, rats, goats, sheep, horses, etc., these glands having been found in all mammalia.

These structures are not confined to a definite location and vary in number. They are usually found along the posterior inner border of the thyroid, but may be found above or below the extremes of the gland at some slightly distant point.

In the great majority of the specimens they lie in the connective tissue outside the capsule of the thyroid, but occasionally one may be found imbedded in its surface. They vary in numbers from one or two to five, six, or seven. Forsyth states that they are most numerous during the first year of life, from two to six being found on each side and decrease until the tenth year when two are usually found on a side.

The reports of 626 autopsies of different investigators give the usual number as four, two on each side, posterior to the posterior border of the lateral lobes of the thyroid—and designate them as the superior and inferior—the former being found at the junction of the upper and middle third of thyroid, and the latter at junction of lower and middle third of same structure. The most constant point of location is near the termination of the inferior thyroid artery.

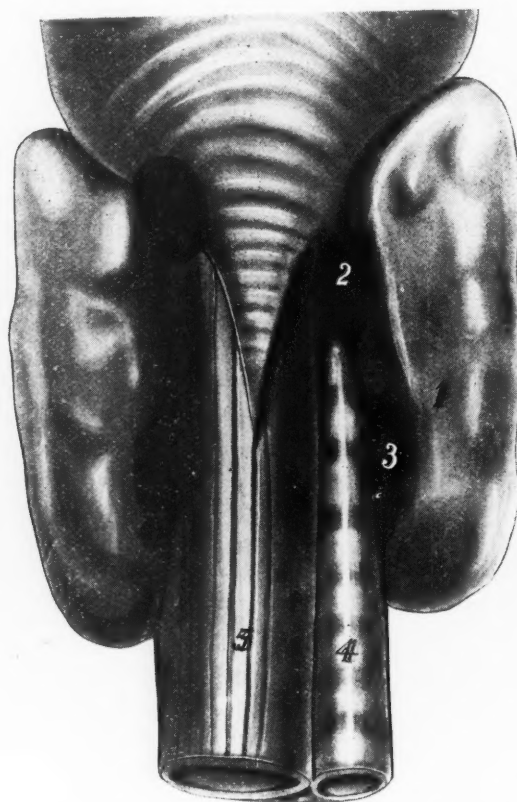
Forsyth, MacCallum, Rogers, Ferguson and Berkely, closely agree on their shape and size. They are flattened, bean or tongue-shaped, of light brown color, and differ greatly in size, from microscopic, to $\frac{1}{4}$ or $\frac{1}{2}$ -inch in length. Of the reports of 325 specimens, the average

* Read before Kent County Medical Society at Grand Rapids, April, 1908.

size was, length 7 mm., width $3\frac{1}{2}$ mm., and 2 mm. thick. They differ from the thyroid tissue—embryologically, histologically and physiologically.

Rodgers and Ferguson state that they decompose readily or undergo apparent autolysis; hence the ordinary dissecting cadaver cannot be used for their study. This has been my experience in trying

Howell states they are small ductless glands of epithelial character, with a capsule, a blood and lymphatic supply, and that they differ embryologically, histologically and physiologically from the thyroids. Forsyth says they secrete small amounts of colloid material, and are strikingly analogous to the adrenals and pituitary body.



Posterior View Showing Usual Position of Parathyroid.
1, Thyroid; 2, Superior Parathyroid; 3, Inferior Parathyroid; 4, Trachea; 5, Esophagus.
(Zuckerkindl.)

to find these glands in the dissecting room. In twelve subjects in which we looked for them we found them in only three, and I had begun to think they were not always present, but later noticed this had been the experience of others who used the cadaver for their study. Experienced investigators report one or more in every recent autopsy.

On the physiological side Gley was the first to prove the great importance of the parathyroids. He showed that in rabbits complete extirpation of the thyroid lobes was not followed by a fatal result so long as the parathyroids remained. Removal of both thyroids and parathyroids, however, is in most cases followed by typical symptoms of com-

plete thyroidectomy ending in the death of the animal. This latter result has been contested by some observers, but renewed investigations have demonstrated its accuracy. Gley explains his results on the hypothesis that after removal of the thyroid its function is vicariously assumed by the parathyroids. He concluded, therefore, that the functional value of the two tissues is identical. Recent works, however, tend to throw doubt upon this conclusion. Vassale and Generali state that in dogs and cats removal of all four parathyroids produces the acute symptoms of complete thyroidectomy, and finally causes the death of the animal, in spite of the fact that the thyroid body proper is left practically uninjured. On the other hand, complete removal of the thyroid lobes is not immediately injurious to the animal, provided the parathyroids are left, or in some cases if even only one is left. They contend, therefore, that the result in dogs and cats usually attributed to extirpation of the thyroids is due in reality to the simultaneous removal of the parathyroids.

This result is partly confirmed by the independent experiments of Rouxeau and of Gley. The former finds that in rabbits complete removal of the thyroids alone causes no trouble, at least no immediate trouble, while excision of the external parathyroids alone is followed frequently by death, or by convulsive symptoms. Gley reports some incomplete experiments upon rabbits and dogs that tend in the same direction.

MacCallum states that ordinarily the loss of one or even two parathyroids is followed by no serious results, but the greater the injury done to the glands the more nearly does the patient approach that condition of parathyroid insufficiency which is likely to lead to disturbing symptoms.

In dogs, cats, rabbits, monkeys, and many other animals, complete parathy-

roidectomy is followed within a few days by the condition commonly described as tetany, in which convulsive spasm and rigidity of the muscles of all parts of the body render the animal almost helpless. Respiration becomes exceedingly rapid and labored, profuse salivation occurs, and death supervenes in the attack, although occasionally the violent symptoms gradually give place to a stuporous condition which may last several days, terminating also in death. Temperature and heart-beat are not changed, to any extent. The fact that bleeding or injection of salt solution will relieve the condition and cause the disappearance of the symptoms for a time supports the view of auto-intoxication as the result of removal of the parathyroids. If it is attempted, however, to produce tetany in a dog by transfusing into its veins the blood of a dog in violent tetany, the result is negative, so that evidently there is either a very minute quantity of circulating poison, or else the tetany in the parathyroidectomized dog is due to a poison which rapidly combines itself with certain cells of the body, and is no longer free in the blood.

Anent physiology, he says that his operative experience covers between 75 and 100 rabbits, seven dogs, and 14 cats. Wherever we succeed in finding and removing all the glands, the symptoms developed invariably in a more or less typical fashion. Occasionally the animal was desperately and typically ill for half a day, but slowly recovered, developing no more symptoms while under observation. Presumably in these instances a remnant of gland left behind had time to hypertrophy. After removal of one or two parathyroids (partial parathyroidectomy) the autopsy always showed that the glands left behind had enlarged—presumably a compensatory hypertrophy. My own experience is that over seven-eighths of the parathyroid substance must be removed in rabbits in order to

produce the characteristic toxemia.

Erdheim contributed a lengthy experimental study of tetany parathyreopriva. He used white rats because they possess but two parathyroids, and also because they are sufficiently small to permit afterwards of serial sections of the structures of the neck to determine if any parathyroid tissue had been left at

Chvostek says that functional disease of the parathyroids is the most plausible explanation of tetany. He regards mechanical hypersusceptibility of nerves, first the facial, as an easily demonstrable and essential symptom of disease of the parathyroids.

Kocher states that the parathyroids as the originating point of tetany in ani-



Posterior View Showing Blood Supply of Parathyroid.
1, Thyroid and Inferior Thyroid Artery; 2, Parathyroid; 3, Superior Thyroid Artery (Hoskins).

the time of operation. In more than 30 animals extirpation of both parathyroids was followed by tetany. All animals living from 54 to 162 days showed severe changes in their gnawing teeth which finally lead to fracture beneath or outside of the alveolar process. He concludes that tetany during pregnancy is in relation to the parathyroids; it is a hypoparathyroidism.

mals has, through a number of observations, been shown to be the most probable also for man. It is entirely certain, however, that the cause of myxedema and Basedow's disease lies in lesions of the thyroid instead of the parathyroids.

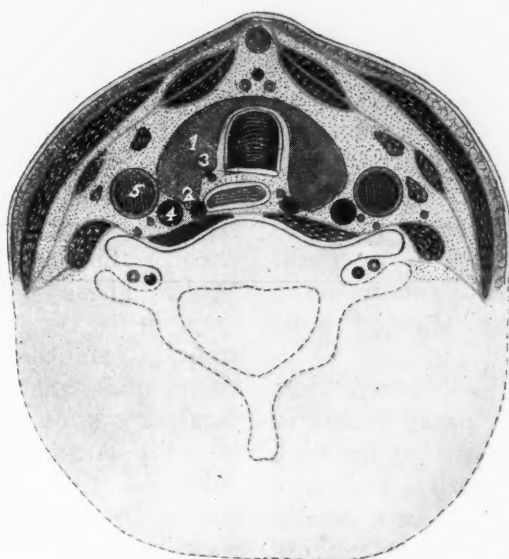
Yanase examined the thyroids in 89 children showing tetanoid conditions, particularly galvanic changes in the peri-

pheral nerves, or spasmophilia. Hemorrhages in the parathyroids were found in 33 cases, 37%. Yanase asserts that hemorrhages are acquired mainly in post-fetal life, perhaps as with pleural and pericardial ecchymoses, at time of birth. Hemorrhages in these glands can be demonstrated with certainty only during the first year of life; after this the possibility progressively becomes smaller, and after the fifth year one cannot say from histologic study that hemorrhage had ever occurred.

it, and in the parathyroids the organ that neutralizes this poison."

The poison primarily affects the central nervous system, and is therefore, probably analogous to the tetanus poison, inasmuch as it affects the central nervous system, producing tetanic convulsions, and is so rapidly combined with the nerve cells as to be practically undemonstrable in the circulating blood.

Attempts to control the course of the tetany following parathyroidectomy by injection of parathyroid material have



Cross Section Through Thyroid and Parathyroid. 1, Thyroid; 2, Parathyroid; 3, Laryngeal Nerve; 4, Internal Jugular Vein; 5, Carotid Artery. (Gerrish.)

He concludes that between parathyroid hemorrhage and tetany there is doubtless a connection. He explains it as follows: "It has been proved experimentally that the parathyroids are poison destroying organs whose principal function most probably is to neutralize metabolic poisons which are detrimental to the nervous system. Therefore we must recognize in metabolism the origin of the so-called tetany poisons, in the nerves the principal tissue attacked by

been followed by various results. Edmunds gave a large quantity of parathyroid material to an animal in tetany without result. Vassale obtained good results from the emulsion of thyroids in which the parathyroids were included, and Gley confirmed these. Lusena describes several cases in which he prolonged life by transplanting parathyroids or by injecting parathyroid material subcutaneously. The subcutaneous injection of parathyroid emulsion for eight

days and then the subcutaneous transplantation of one parathyroid every fifteen days kept the dog alive for more than four months; others were kept alive for over two months by the implantation of parathyroids.

MacCallum, from a study of these cases by Lusena, as well as experiments of his own, believes that after complete parathyroidectomy the life of the animal can be maintained only with the greatest difficulty by the injection intravenously of relatively large quantities of parathyroid material.

Hemorrhage in the parathyroids does not totally destroy but only partly damages the glands, hence it is not the actual or only cause of tetany, but it can so act as finally to produce that affection. The poison increases because the parathyroid damaged by hemorrhage no longer exerts its usual function. Only in this way can be explained how parathyroid hemorrhage early in postfetal life, leads in many cases to tetany much later in the life of the affected individual.

Experimental study has shown that complete removal of the parathyroids is always followed by acute symptoms, convulsions and early death. The persistence of only one gland may assure its survival. In case of complete removal of the thyroid apparatus (thyroparathyroidectomy) it is a positive fact that removal of the parathyroids is the cause of the postoperative tetanic symptoms.

The results of removal of the thyroid body alone are different; here we do not have the acute nervous symptoms; the trophic disturbances which follow are of a chronic nature. The symptoms following parathyroidectomy simulate the phenomena of auto-intoxication (Toxicity of serum, hypertoxicity of urine, etc.) It has been observed in man that an insufficiency of parathyroidin prevails in persons operated on by thyroidectomy, and

it is quite likely that there exists a parathyroidin insufficiency.

The tetany symptoms are readily produced in parathyroidectomized dogs by feeding them freely of fresh meat, and it appears from this that there is a toxin introduced into the system which should be neutralized by the parathyroid secretion.

Thompson reports a careful study of the parathyroids in 12 cases of infantile atrophy, controlled by investigation of the glands in 12 other children of the same age, namely from birth to one year. The changes found in the first series were degenerative and sclerotic. The former progressed in some instances to complete loss of cell structure with fusing of the cytoplasm into a mass in which the nuclei were irregularly placed. The most common finding, however, was a pronounced increase in the connective tissue stroma, corresponding closely to chronic fibrous parathyroiditis in the adult. These changes are similar to those in the thymus gland which are constant in infantile atrophy. He does not assert that the parathyroid and other ductless glands are primarily at fault in infantile atrophy, but emphasizes the point that the changes due to mal-assimilation in this affection are more than wasting of fat and muscle.

Anent pathological relation with parathyroids Jeandelise mentions infantile convulsions, epilepsy, tetany, eclampsia and paralysis agitans as worthy of consideration.

MacCallum, in support of the latter hypothesis, reports an autopsy on a case of tetany in an old man dying of extreme dilatation of the stomach. Five good-sized parathyroids were found, all showing numerous mitoses. In view of the rarity of such mitoses in ordinary autopsies, he is disposed to conclude that tetanizing toxins from the stomach had made an extraordinary demand upon these glands, with this result. In the

same paper he reports that in a woman of 39 years, year-long symptoms of tetany, which had been specially trying during pregnancy and menstruation, were relieved by parathyroid medication.

Berkeley has made a therapeutic application of physiologically tested gland

to 11 cases of shaking palsy in all grades of advancement; of these, nine patients were helped, the earlier cases were greatly helped, and one of the author's patients, a very early case, considered himself nearly entirely relieved while under the influence of the drug.

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Medical Fees in Ancient Greece.—The remuneration of physicians originally consisted in presents, but at the time of Hippocrates payment in money was already customary. Physicians received also public praise, the "crown of honor," the freedom of the city, the privilege of eating at the king's table. Physicians employed by the State received a yearly salary, as high as \$2,000 in some instances. Rich people would pay enormous sums for a successful treatment, and a case is recorded in which \$200,000 was paid.—*N. Y. Med. Journal*.

Torsion of the testicle is often difficult to diagnose from epididymitis and orchitis. The chief points in favor of the former are its suddenness of development, the early age of most patients, and the absence of any signs of gonorrheal infection of the urethra or prostate.

Although a rigid abdomen is generally characteristic of peritonitis, this applies only to the early period of the disease, since in the later stages or in the severe septic form there is a tendency for the abdomen to again become soft and palpable without pain.—*Int. Jour. of Surgery*.

A STUDY OF TUBERCULOSIS IN THE UNITED STATES BASED ON THE RETURNS OF THE TWELFTH CENSUS—WITH SOME SPECIAL APPLICATIONS TO THE STATE OF MICHIGAN.

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I take pleasure in bringing to the attention of The Journal of the Michigan State Medical Society the results of a paper recently prepared and presented to the International Congress on Tuberculosis. The object of the paper was to indicate a method of analysis of the population and vital statistics furnished by

plies equally well to any other disease when the vital statistics relating to it are known. The results contained in this paper are derived from the "Population and Vital Statistics of the Twelfth Census of the United States," given in Table I.

The investigation relates to males aged twenty and over, and the ages are taken in five-year groups. The table shows that on June 1, 1900, the date of the census enumeration, there were in the United States 3,684,373 young men over twenty and under twenty-five years of age; that in the census year beginning June 1, 1899, and ending May 31, 1900, there were in the United States 25,252 deaths from *all causes* among young men over twenty and under twenty-five years of age and 6,839 of these deaths were due to tuberculosis of the lungs and the balance 18,413 due to other causes. The total deaths from all causes are undoubtedly understated and the deaths from tuberculosis are probably understated to a still greater degree. The effect of this understatement, however, is to a large extent eliminated from the final conclusions reached in this paper for the reason that they are based on the *difference* between two tables, both of which contain the errors of understatement of the question under discussion, and the process of taking the difference practically eliminates these errors. The first step in the reduction of the raw statistical material was to

TABLE I.

MALES
POPULATION AND VITAL STATISTICS DRAWN FROM THE
TWELFTH CENSUS OF THE UNITED STATES.

Age Group.	Male Population.	Deaths From All Causes.	Deaths From Tuberculosis of the Lungs.	Deaths From All Causes Except Tuberculosis.
20-24	3,684,373	25,252	6,839	18,413
25-29	3,369,077	24,173	7,154	17,019
30-34	2,931,037	22,349	6,285	16,064
35-39	2,636,434	23,296	5,686	17,610
40-44	2,268,772	22,428	4,547	17,881
45-49	1,845,235	22,529	3,736	18,793
50-54	1,569,273	23,915	3,216	20,699
55-59	1,147,810	24,024	2,608	21,416
60-64	919,645	26,269	2,066	24,203
65-69	668,749	28,563	1,753	26,810
70-74	450,160	28,761	1,291	27,470
75-79	261,863	24,627	755	23,872
80-84	122,454	17,525	308	17,217
85-89	40,799	8,457	99	8,358
90-94	9,888	2,616	25	2,591
95-99	2,432	1,045	11	1,034

the Federal Bureau of the Census to determine the effect of any particular disease upon the community, both from the vital and social point of view. In this paper tuberculosis of the lungs was primarily considered. The method ap-

deduce two mortality tables; one on the assumption that tuberculosis is present in the community, and the other that it is not present. By "tuberculosis present" it must *not* be understood that everybody in the community *has* it, but that the disease is present in the community and every member runs the risk of being exposed to it. This is the condition existing practically everywhere at the present time.

TABLE II.

MORTALITY TABLE WHEN TUBERCULOSIS IS NOT PRESENT, WHEN TUBERCULOSIS IS PRESENT, AND THE DIFFERENCE IN SURVIVORS AT EACH AGE.

Age.	Number Living Tuberculosis		Loss in Survivors at Each Age.
	Not Present.	Present.	
20	100,000	100,000	0
30	95,132	93,311	1821
40	89,479	85,907	3572
50	81,662	76,833	4829
60	69,448	63,947	5501
70	49,437	44,419	5018
80	22,717	19,839	2878
90	4,010	3,415	595
100	101	84	17
104	1	1	0

The third column in Table II exhibits the mortality table when tuberculosis is present. It shows that the group of 100,000 young men living at age twenty is reduced through death from all causes, *including tuberculosis*, to 93,311 at age thirty, to 85,907 at age forty, to 44,419 at age seventy, and to 84 at age one hundred. The mortality table with *deaths from tuberculosis excluded* is shown in the second column of Table II. By "tuberculosis not present" is here meant that there are *no deaths* from this disease; the effect of morbidity due to the presence of the disease in a form not fatal and the increased ravages of other diseases under this favorable condition are still contained in the table just described. The decided improvement shown in survival is due solely to the elimination of cases of tuberculosis with fatal termination. The initial group of 100,000 men at age twenty, under these

conditions, would contain 95,132 survivors at age thirty, 89,479 at age forty, and 101 at age one hundred.

The fourth column gives the difference between the second and third, and shows the loss in survivors due to the presence of tuberculosis. For example, if there were no deaths from tuberculosis there would be 1,821 more survivors at age thirty than at present, 3,572 more at age forty, etc. The completed table would show the maximum increase in survivors to be 5,517 at age sixty-two. The higher ages of the table indicate that the elimination of tuberculosis would have a decided effect on the longevity of the race. At age eighty, the number of survivors is increased from 19,839 to 22,717, that is, by 2,878. This is an increase of more than fourteen per cent. At age ninety the increase is over seventeen per cent. If the data were at hand to construct the table at higher ages with great precision I doubt not that a careful study of the combined effect of tuberculosis and other preventable diseases would show that under more favorable circumstances with these diseases eliminated the age of man could be extended to one hundred and fifty years and even higher. In other words, it is not unlikely that the normal age of man lies somewhere near one hundred and fifty, and that he is now prevented from attaining this age by the presence of a multitude of factors which are coming to be recognized as preventable. By this increase in the period of longevity it must be understood of course that the decline in the vital forces does not begin until a much later time in life than under present conditions, that both mental and physical vigor may normally continue long after age one hundred has been passed, and that the period which now corresponds to the weakness of senility and old age should not arrive under ideal conditions until after age one hundred and twenty-five.

TABLE III.

COMPARATIVE TABLE SHOWING THE DEATH RATE PER ANNUM PER 1,000 PERSONS FOR CERTAIN AGES BETWEEN 20 AND 60; (a) BY THE AMERICAN EXPERIENCE TABLE OF MORTALITY, (b) BY THE UNITED STATES TWELFTH CENSUS RETURNS FOR MALES, WHEN TUBERCULOSIS IS PRESENT, WHEN NOT PRESENT, AND THE DIFFERENCE.

DEATH RATE PER ANNUM PER 1,000.

Age.	American Experience Table.	When Tuberculosis is—		
		Present.	Not Present.	Difference.
20	7.805	6.040	4.590	1.450
25	8.065	7.020	5.021	1.999
30	8.427	7.416	5.298	2.118
35	8.946	8.320	6.183	2.137
40	9.794	9.417	7.376	2.041
45	11.163	11.211	9.225	1.986
50	13.781	13.926	11.915	2.011
55	18.571	18.471	16.335	2.136
60	26.693	25.177	22.981	2.196

The above table deals with the important matter of death rates. For the purpose of comparison the death rates by the American Experience Mortality Table, the one now employed by most life insurance companies in this country to compute their premiums and reserves, are given. By the death rate as shown in this table is meant the number of deaths occurring in a year in a group of one thousand persons living at the given age. Thus when tuberculosis is present, the death rate at age twenty is 6.040; if tuberculosis were not present, the death rate would be 4.590. This is another way of stating that 1.450 deaths per one thousand of population at this age is due to this disease. The difference column increases slightly, but does not vary much from two per thousand. This shows that advanced age is no protection against tuberculosis. Indeed the danger of exposure to it is somewhat greater at age sixty than at age twenty. Statisticians have not infrequently fallen into the error of comparing the deaths from tuberculosis with deaths from all causes and because this ratio decreases at the higher ages have inferred that tuberculosis is not much to be dreaded after the age of forty. The fact is we

are more likely to notice the disease at age twenty-five because it is the cause of two out of every seven deaths, whereas at age sixty it is the cause of two out of every twenty-five deaths. Other diseases which were not active at age twenty-five are decimating the population at age sixty at the rate of twenty-three per thousand. Moreover, as the population at twenty-five is much larger than at age sixty the *number* of deaths from tuberculosis in the former group is very much larger than in the latter. A glance at Table I will make this point clear. But we cannot compare the mortality of the disease at different ages unless we observe groups at these ages containing precisely the same number of people. According to the table under discussion, in a population of 1,000,000 aged twenty-five, 1,199 deaths would occur within the year from tuberculosis. In a population of 1,000,000 aged sixty, 2,196 deaths would occur from the same cause, or 197 more fatal terminations under like conditions would happen at age sixty than at age twenty-five. It seems essential then that this fallacy should be corrected and the public warned that age is no protection from this disease and exposure to it is attended with more and more danger with increasing age.

TABLE IV.

COMPARATIVE TABLE SHOWING AT CERTAIN AGES THE TOTAL NUMBER OF YEARS OF FUTURE LIFETIME WHICH WILL BE LIVED BY THE SURVIVORS OF 100,000 MALES AT AGE TWENTY.

Age.	Total Future Lifetime in Years When Tuberculosis—		Loss in Years.
	Is Not Present.	Is Present.	
20	4,566,480	4,323,068	243,412
30	3,593,043	3,359,292	233,751
40	2,671,451	2,465,821	205,630
50	1,817,076	1,654,490	162,586
60	1,062,496	952,505	109,991
70	470,064	413,651	56,413
80	121,523	104,768	16,755
90	11,752	9,916	1,836

A subject of particular interest in this connection is the loss in future years of

lifetime due to tuberculosis. A brief consideration is sufficient to show that in a large community thousands of years of lifetime are cut off by the accelerated death of individuals within the group. The actual number of years lost can be easily determined from the mortality tables set forth in Table II, and the results are given in the above Table IV. The table is a comparative one showing at certain ages the total number of years of future lifetime which will be lived by the survivors of one hundred thousand males at age twenty when tuberculosis is not present, and when tuberculosis is present. An examination of the table shows that the survivors at age sixty would have 1,062,496 years of future lifetime before them if tuberculosis were not present, and that under normal conditions with tuberculosis present the survivors at age sixty have 952,505 years of future lifetime to live, a loss of 109,991 years of future lifetime due to the presence of tuberculosis. In like manner, it is seen that at age twenty the total loss in years of future lifetime sustained by a group of 100,000 young men is 243,412 years. A consideration of the column head "Loss in Years" will make clear, even to the layman, how it happens that the presence of tuberculosis can bring financial loss to the community. We have at this age a loss of 243,412 years, most of which occurs before the young men, who are now twenty, attain the age of seventy. Assuming in round numbers for purposes of illustration that 200,000 of these years of future lifetime are lost by the original group of 100,000 survivors aged twenty before they attain age seventy, it is clear that these years are lost during the wealth producing period of life. If each year represents a loss of one hundred dollars in wealth to the nation, we should have a loss on this group of \$20,000,000, the interest factor being neglected. There were in 1900 over 700,000 young men in

this country twenty years of age, accordingly, the loss which the country must expect to sustain on this group, the interest factor being neglected is in round numbers \$140,000,000. In a later table we shall see that the capitalized or present value with interest assumed at five per cent, of the loss on this particular group of young men on a wealth producing basis of one hundred dollars per annum is exactly \$35,332,569. These facts are pointed out at this time in order to emphasize how and where the loss due to tuberculosis or any other disease occurs. The presence of a disease in any group of persons or in any community inevitably decreases the total future lifetime of that group and a direct measure of the loss due to such disease must be found in the *number of years taken out of the life of the group*.

TABLE V.

COMPARATIVE TABLE SHOWING AT CERTAIN AGES THE COMPLETE EXPECTATION OF LIFE AND THE LOSS IN SAME DUE TO THE PRESENCE OF TUBERCULOSIS.

Age.	Complete Expectation of Life When Tuberculosis is—		Loss in	
	Not Present.	Present.	Years.	Days.
20	46.165	43.731	2	158
30	38.269	36.501	1	280
40	30.356	29.203	1	56
50	22.751	22.034		262
60	15.799	15.395		147
70	10.008	9.812		72
80	5.849	5.781		25
90	3.431	3.404		10

It is interesting to examine the effect of tuberculosis on the expectation of life. By the expectation of life at any age is meant the average future or after lifetime at that age. To determine it, therefore, it is only necessary to divide the total years of future lifetime given in Table IV at any age by the number of survivors, given in Table II, at that age, adding one-half year to the quotient to provide for the fact that deaths on the average occur uniformly throughout the year so that in the long run the average length of life *in the year of death*

is six months, or one-half year. The two columns giving the expectation of life in Table V were obtained in this manner. Our chief interest lies, however, not so much in the columns themselves as in their difference, for it is the effect of tuberculosis in shortening the average future lifetime which we are seeking. Although there may be more or less error in the statistics from which the two main columns were derived, these errors being of like nature will mostly disappear in taking the differences of the columns. Considerable reliance therefore may be placed upon the column in Table IV giving the "Loss in Years" of total future lifetime, and in the present table giving the "Loss in Years and Days" in expectation of life. Table V shows that the expectation of life of *every person in the community* aged twenty years is reduced two years and one hundred and fifty-eight days by tuberculosis. Even at age forty, the loss in the expectation of life is one year and fifty-six days, and the figures are not materially reduced, when the age is considered in connection therewith, at the more advanced ages.

Few people are aware of the enormous loss in wealth which this country suffers on account of tuberculosis. The *amount of this loss* has a special significance when considered in connection with the cost of an organized campaign having for its object the practical elimination of tuberculosis. To accomplish this result it is essential that extensive and continuous financial assistance be forthcoming for a considerable period of years, and the question arises as to how much the state or nation would be justified in spending to check the disease within its boundaries. I have considered this subject in some detail and derived tables from the population and vital statistics of the twelfth census of the United States by means of which the monetary loss sustained by a commun-

ity of given population can easily be computed. It is assumed that on the average each male member of the community between the ages twenty and sixty can add, over and above his living expenses, a net sum of one hundred dollars each year to the wealth of the community. This ability to produce wealth is assumed to continue until age seventy and then cease. The total gain which is thus contributed is found for each age, and the equivalent capitalized sum is computed, taking into account the interest factor, five per cent, and the mortality factor, determining the probable length of life. The gain in wealth is first computed on the assumption that there are no deaths from tuberculosis and then again on the assumption that the conditions as regards tuberculosis

TABLE VI.

PRESENT OR CAPITALIZED VALUE AT CERTAIN AGES COMPUTED WITH FIVE PER CENT. INTEREST OF A WEALTH INCREMENT OF \$100 PER ANNUM, CONTINUING UNTIL AGE SEVENTY.

Age.	When Tuberculosis is— Not Present.	Present.	Loss in Value at Each Age.
20	\$1642.29	\$1594.78	\$47.51
25	1,589.44	1543.63	45.81
30	1522.37	1481.16	41.21
35	1438.62	1402.92	35.70
40	1337.78	1308.06	29.72
45	1214.80	1190.59	24.21
50	1066.86	1048.14	18.72
55	887.08	873.88	13.20
60	667.79	660.28	7.51

are those which now prevail. The gain in the former case will, of course, be greater than in the latter because with deaths from tuberculosis eliminated people would live longer and hence contribute for a longer period of years to the wealth of the community. This excess, *which would be realized if there were no deaths from tuberculosis*, is the monetary loss which the community must suffer owing to the presence of the disease. Technically speaking, the difference between the capitalized value of the future

net wealth producing capacity of an individual in a community at a given age, first on the assumption that tuberculosis is not present, and then on the assumption that it is present, is the loss which the community must inevitably sustain on that individual so long as the disease remains unchecked in the community. Table VI gives these figures for certain ages.

The second column shows that if tuberculosis were not present the capitalized value, computed at five per cent, of the yearly \$100 wealth additions produced by the young man aged twenty working until age seventy, would be \$1,642.29, while according to the third column the capitalized value of the annual \$100 wealth increments of the same young man under prevailing conditions, that is, with tuberculosis present, is reduced to \$1,594.78. The difference, which represents the capitalized value of the loss at this age, is \$47.51. The loss appears to decrease with the age, beginning with \$47.51 at age twenty and decreasing to \$7.51 at age sixty. The decrease is not uniform, and it is easily seen that most of the loss is sustained on the group between the ages twenty and forty. This is to be expected, as the younger generation, having an earning capacity until age seventy, will be contributing to the wealth of the nation for a longer period of time. The distinguishing feature of the method here described is that under certain stated conditions the loss in value at *each age* is given. If the conditions were otherwise as to wealth producing capacity, or the age at which it ceases the final results could be computed with equal facility from the mortality tables herein derived. The figures obtained above were first applied to determine the total loss sustained in the United States. I give herewith a table showing the loss for certain age groups, it not being deemed necessary to extend the table to the de-

tail involved in giving each individual age.

TABLE VII.

TABLE SHOWING THE CAPITALIZED OR PRESENT VALUE, COMPOUNDED ANNUALLY AT FIVE PER CENT, OF THE LOSS DUE TO TUBERCULOSIS ON THE MALE POPULATION OF THE UNITED STATES FOR QUINQUENNIAL AGE GROUPS BETWEEN AGES 20 AND 60 ON THE BASIS OF A WEALTH PRODUCING CAPACITY OF \$100 PER ANNUM UNTIL AGE 70.

Age.	Population, 1900	Total Loss.
20-24	3,684,373	\$174,084,182
20-29	6,963,450	322,936,476
20-34	9,894,587	437,914,519
20-39	12,530,921	525,873,205
20-44	14,799,693	588,827,939
20-49	16,644,928	629,784,069
20-54	18,214,201	656,159,169
20-60	19,637,898	671,018,025

An examination of this table shows that at the date of the twelfth census the number of males living over twenty and under twenty-five years of age, that is, in the age group 20-24 was 3,684,373. The loss sustained on this group is \$174,084,182. Table VII also shows that the loss sustained on the age group 20-39 is \$525,873,205, while the loss sustained on the age group 20-60 is \$671,018,025. It thus appears that most of the loss will be sustained on that portion of the group between ages twenty and forty. In order to show more clearly how all the figures in this table were obtained, the fol-

TABLE VIII.

TABLE SHOWING THE CAPITALIZED OR PRESENT VALUE, COMPOUNDED ANNUALLY AT 5%, OF THE LOSS DUE TO TUBERCULOSIS ON THE MALE POPULATION OF THE UNITED STATES FOR AGES 20 TO 24 ON THE BASIS OF A WEALTH PRODUCING CAPACITY OF \$100 PER ANNUM UNTIL AGE 70.

Age.	Population, 1900.	Loss Rate.	Total Loss.
20	743,687	\$47.51	\$35,332,569
21	739,047	47.67	35,230,370
22	745,491	47.49	35,403,368
23	721,847	47.04	33,955,683
24	734,301	46.47	34,122,967
20-24	3,684,373		\$174,084,182

lowing supplementary table is given. It relates only to the group of males over age twenty and under age twenty-five.

There were, according to Table VIII, 743,687 living at age twenty. The loss rate at this age is \$47.51. Multiplying these numbers together we have \$35,332,569 as the present or capitalized value of the loss which will be sustained on this group before they reach age seventy. There were 739,047 in the age group twenty-one. The loss rate is \$47.67, the loss \$35,230,370. At age twenty-two the number living was 745,491, the loss rate \$47.49, the loss \$35,403,368; similarly for ages twenty-three and twenty-four. Adding up the losses sustained on these five ages, we obtain the total loss \$174,084,182 given in the preceding table on the age group 20-24. It appears then that the total loss which will be sustained by the United States on the male population between ages twenty and sixty had a capitalized value at the beginning of this century of \$671,018,025. Since the producing capacity of \$100 per annum was assumed to cease at age seventy all this loss will be sustained during the first half of the present century. The wealth producing basis, of course, is an economic factor more or less subject to variation of opinion. Some writers have taken \$300 to represent the average wealth producing capacity per annum. This would mean a total loss whose present or capitalized value is \$2,013,054,075. While these figures are startling in magnitude, I wish to emphasize that they are more than conservative and may with certainty be set down as *minimum* figures. The chief and almost self-evident circumstances which tend to make the results minimum are the following:

(a) They are based upon *reported* deaths from pulmonary tuberculosis. It is well known that these *reported* cases are considerably below the *actual* number. The Hon. S. N. D. North, director of the Bureau of the Census, says in his report on tuberculosis in the United States, prepared for the International

Congress on Tuberculosis, that "There is a large margin of possible error and probably of understatement in the recorded deaths from tuberculosis even in the registration area." It is unnecessary to go into any detail here as to the causes which lead to the concealment of or failure to return deaths from this disease.

(b) The figures given are based on cases of pulmonary tuberculosis with fatal termination, hence the effect in the decrease in *length* but *not in breadth* of life is considered. It is sufficient to call attention to the fact that the presence of tuberculosis in a community involves a tremendous increase in morbidity; that cases without fatal termination are far more numerous than those with fatal termination; that tuberculous morbidity subjects the community to the attack of other diseases, with the result that many of such cases owing to lowered vitality terminate fatally; that the earning or wealth producing period in both fatal and non-fatal cases of pulmonary tuberculosis or other cases which have invaded the community owing to tuberculous morbidity must necessarily be considerably diminished. The loss rates obtained in the preceding computations are based upon the assumption that the individual can produce wealth at the average rate of \$100 per annum until the age of seventy, but it is clear that the tuberculous individual must be incapacitated whether the case terminates fatally or not for a number of years within the wealth producing period. During these years instead of adding he is actually subtracting wealth from the community. The individual with lowered vitality produces a smaller wealth increment and the individual who cannot work becomes a financial burden upon the community.

(c) The present figures relate only to males between ages twenty and sixty working until age seventy. The loss

due to the burden of tuberculosis on the male population under twenty and over sixty is not counted. As it happens that members of these groups are largely dependent upon the productive capacity of the main group between ages twenty and sixty, it follows that tuberculosis in these dependent groups must serve to produce a greater drain upon the supporting group.

(d) The loss results refer to a *fixed time* and to a *particular group*, namely, the present value of the future loss which will be sustained on the *group living at that fixed time between ages twenty and sixty*. It is evident that as this group moves on in time, other groups of the living will come in, and upon these new groups additional losses will be sustained. For example, the group now living between ages 15-19 in five years will be a group between ages 20-24, a group upon which we have seen the loss is very great.

(e) The monetary loss due to tuberculosis among females has not been considered at all. When the appropriate statistical material is available, the methods set forth in this paper may be employed to determine the loss on all these omitted factors, but for the purpose of clearness of presentation it was decided to confine the attention to the definite group of wage-earners between ages twenty and sixty. The results obtained on this group are comparatively free from the criticism of personal estimate. Moreover, with all the elements above mentioned omitted, the magnitude of these minimum figures should be sufficiently great to sharply call the attention of our legislative bodies and others in authority to the fact that they have here a great problem confronting them. In addition to the suffering, misery, and untimely death, due to tuberculosis, the country is constantly subjected to a tremendous financial drain. If the minimum value of this financial loss can be

determined are we not justified in expending a large fraction of this minimum amount, if it can be shown that such expenditure will result in the elimination of a corresponding proportion of the fatal terminations from tuberculosis? The loss in the state of Michigan, computed in accordance with the preceding methods is \$22,000,996, and the loss in Wayne County is \$3,308,412. This means that the state of Michigan, beginning with this century will sustain on the group of men then living between ages twenty and sixty a monetary loss whose value, computed at 5%, at the beginning of the century was in round numbers \$22,000,000. Another way of putting this is that Michigan is certain to be poorer by \$22,000,000 unless the disease is checked and that *the state cannot afford* to remain idle and submit to this drain. The city of Detroit alone bears \$2,682,891 of this burden, and its weight with a growing population is bound to increase unless unusual measures are taken to lower the tuberculosis death rate.

The practical question arises as to what the annual loss may be. I give in the following table both the total and annual losses for certain areas. The annual loss is obtained by merely spreading the total loss over a period of fifty years, and is the annual payment on a fifty-year annuity whose present value computed at 5% is equal to the total loss heretofore given. Fifty years was se-

TABLE IX.

MINIMUM ANNUAL AND TOTAL LOSSES ON TUBERCULOSIS.

	Annual Loss.	Total Loss.
United States.....	\$36,756,228	\$671,018,025
Michigan	1,205,144	22,000,996
Detroit	146,960	2,682,891

lected as the maximum length of time within which the loss would be sustained, because those who are now twenty and over will have attained or passed

the age of seventy after the lapse of fifty years. It is evident that the actual annual loss is not uniform, but will be heavier in the earlier than in the later part of this fifty-year period.

The table shows that the annual minimum loss in the United States is about \$37,000,000, in Michigan something in excess of \$1,000,000 and in the city of Detroit about \$150,000. Applying these figures more directly to our own state we may say without fear of exaggeration and indeed with greatest conservatism that the state of Michigan can well afford to expend \$1,000,000 each year in a campaign against this disease so planned as to bring about its practical extermination by the end of half a century. The share of the City of Detroit in this expenditure would be about \$150,000 per annum. The state and city are certainly going to lose these amounts each year, and more, if tuberculosis remains unchecked, so that to remain inactive is only to court financial loss.

Fortunately the state of Michigan, its counties and cities, including the city of Detroit, enjoy at the present time about the lowest tuberculosis death rate in the country, the rate for the state being about one-half the average death rate from this disease throughout the United States. This condition should inspire the state and its municipalities to renewed energy and a determination to still further reduce the loss. It seems to me that it is well worth while for our legislative and municipal authorities to give this matter their serious consideration, and deal with it in a manner whose scope is appropriate to the magnitude of the questions involved. Every large municipality and many of the counties in the state of Michigan should construct tuberculosis sanatoria to be conducted upon a liberal and adequate scale, should build and equip them not for five but for fifty years, and all advanced and open cases of this disease should be

segregated therein and cared for at the expense of the state. This step would have a decided effect in diminishing the spread of the disease, for it would mean the effective isolation of many dangerous centers of tuberculous infection. A widespread and effective campaign of education should be undertaken. These, of course, are only suggestions of a general nature. The details and plans for a campaign for the twentieth century in the state of Michigan should be worked out by a committee of experts. The point which the writer particularly desires to emphasize is that the figures contained in this article justify the early organization and financing of such a campaign under the authority and support of the state and its municipalities. While much good can be and has been accomplished by individual initiative, by public subscription, and by the tuberculosis stamp movement, I fear that they are all inadequate to successfully cope with this big problem without the aid of the state. The financial support for this tremendous battle must not be subject to the variations and uncertainty of private gift and unorganized public subscription. It must have the financial backing and support of the public represented through the state of Michigan and its municipalities.

Another phase of this subject, and one which appeals directly to every life insurance policyholder, is the effect which tuberculosis has upon the cost of insurance. Tuberculosis death claims head the list of payments of practically all old line companies at the present time. And this in spite of the fact that they reject applicants who, after careful medical examination, are found to have tuberculosis or a bad family history with respect to this disease. The fraternal companies are likewise burdened with a heavy mortality from tuberculosis. The official reports of the Modern Woodmen of America show that more than fourteen per-

cent of their total mortality from 1891 to 1907 was due to tuberculosis, and that the 5,156 deaths during that period cost the order \$9,065,000. This drain has induced the society to attempt to reduce the tax by establishing an open-

TABLE X.

SAVING WHICH WOULD BE EFFECTED IN THE ANNUAL PREMIUM ON AN ORDINARY WHOLE LIFE POLICY FOR \$1000 IF TUBERCULOSIS WERE ELIMINATED.

Age.	Annual Premium.	Age.	Annual Premium.	Age.	Annual Premium.
20	\$1.67	35	\$1.66	50	\$1.65
25	1.72	40	1.62	55	1.72
30	1.70	45	1.62	60	1.77

air colony in Colorado for the cure of Woodmen who are afflicted. It is not uncommon in Europe to find sanatoria maintained by insurance companies for the benefit of their policyholders, but I

am not aware of any similar undertaking by any of the large legal reserve companies in this country. Certainly there would seem to be sufficient justification, from a business point of view, for large expenditures in this direction on the part of our giant life companies.

Table X shows the *reduction* which would be effected in annual premiums if tuberculosis were not present. It averages about \$1.75 per thousand of insurance so that every policyholder with a ten-thousand-dollar ordinary whole-life policy is annually contributing from fifteen to twenty dollars of his premium on account of this disease. These losses are computed on a 5 per cent. basis, while most companies operate on a 3 per cent. basis. The difference is offset, however, by the fact that the number of deaths in the company must be somewhat lessened by the selection in risks

TABLE XI.

TABLE SHOWING THE CAPITALIZED OR PRESENT VALUE, COMPOUNDED ANNUALLY AT 5%, OF THE LOSS DUE TO TUBERCULOSIS ON THE MALE POPULATION OF MICHIGAN FOR EACH AGE AND CERTAIN AGE GROUPS BETWEEN AGES 20 AND 60 ON THE BASIS OF

A WEALTH PRODUCING CAPACITY OF \$100 PER ANNUM UNTIL AGE 70.

Age.	Population, 1904.	Loss Rate.	Total Loss.	Age.	Population, 1904.	Loss Rate.	Total Loss.
20	23,442	\$47.51	\$1,113,729	40	19,068	\$29.72	\$ 566,701
21	24,124	47.67	1,149,991	41	12,788	28.60	365,737
22	22,457	47.49	1,066,483	42	17,182	27.48	472,161
23	22,105	47.04	1,039,819	43	15,721	26.40	415,034
24	22,298	46.47	1,036,188	44	15,301	25.29	386,962
20-24	114,426		5,406,210	20-44	480,523		18,814,448
25	21,179	45.81	970,210	45	17,246	24.21	417,526
26	20,646	45.07	930,515	46	13,692	23.13	316,696
27	20,311	44.19	897,543	47	13,473	22.02	296,675
28	22,547	43.22	974,481	48	14,512	20.92	303,591
29	19,260	42.25	813,735	49	12,786	19.84	253,674
20-29	218,369		9,992,694	20-49	552,232		20,402,610
30	22,106	41.21	910,988	50	14,904	18.72	279,003
31	15,761	40.17	633,119	51	9,619	17.62	169,487
32	19,034	39.09	744,039	52	12,962	16.52	214,132
33	17,840	37.98	677,563	53	11,284	15.47	174,563
34	18,551	36.85	683,604	54	11,389	14.34	163,318
20-34	311,661		13,642,007	20-54	612,390		21,403,113
35	19,864	35.70	709,145	55	10,525	13.20	138,930
36	17,746	34.51	612,414	56	10,316	12.06	124,773
37	16,747	33.31	557,843	57	8,671	10.89	94,427
38	18,698	32.09	600,019	58	9,127	9.72	88,714
39	15,747	30.89	486,425	59	8,815	8.59	75,721
				60	10,029	7.51	75,318
20-39	400,463		16,607,853	20-60	669,903		22,000,996

due to the medical examination when the policy is issued. But it is interesting to note that in spite of this selection the body of policyholders eventually become exposed to the infection and a large number of them contract and die from the disease after entering the company.

In conclusion, I submit Tables XI and XII showing the detailed losses for the state of Michigan and Wayne County, based on the population according to the state census of 1904. Also Table XIII which shows the annual and total losses for each county in the state. It should be understood that these losses are based on the average tuberculosis death rate

for the entire country. Full credit should be given for the fact that Michigan enjoys a much lower tuberculosis death rate than this general average. This can be done approximately by taking such fractional part of the totals shown in these tables as the ratio of deaths from tuberculosis per 100,000 for the locality in question bears to the corresponding ratio for the United States. When we consider, however, the factors which have been omitted, it appears quite unnecessary to make any allowances, and we may confidently assume the results set forth to be minimum in character.

TABLE XII.

TABLE SHOWING THE CAPITALIZED OR PRESENT VALUE, COMPOUNDED ANNUALLY AT 5%, OF THE LOSS DUE TO TUBERCULOSIS ON THE MALE POPULATION OF WAYNE COUNTY, MICHIGAN, FOR EACH AGE AND CERTAIN AGE GROUPS BETWEEN AGES 20 AND 60 ON

THE BASIS OF A WEALTH PRODUCING CAPACITY OF \$100 PER ANNUM UNTIL AGE 70.

Age.	Population, 1904.	Loss Rate.	Total Loss.	Age.	Population, 1904.	Loss Rate.	Total Loss.
20	3,650	\$47.51	\$ 173,412	40	2,609	\$29.72	\$ 77,539
21	3,661	47.67	174,520	41	2,014	28.60	57,600
22	3,454	47.49	164,030	42	1,805	27.48	49,601
23	3,595	47.04	169,109	43	2,256	26.40	59,558
24	3,401	46.47	158,044	44	2,069	25.29	52,325
20-24	17,761		839,115	20-44	74,688		2,940,364
25	3,303	45.81	151,310	45	1,924	24.21	46,580
26	3,002	45.07	135,300	46	1,687	23.13	39,020
27	3,137	44.19	138,624	47	1,462	22.02	32,193
28	3,439	43.22	148,634	48	1,941	20.92	40,606
29	3,502	42.25	147,960	49	1,693	19.84	33,589
20-29	34,144		1,560,943	20-49	83,395		3,132,352
30	3,514	41.21	144,812	50	1,521	18.72	28,473
31	2,823	40.17	113,400	51	1,183	17.62	20,844
32	3,170	39.09	123,915	52	1,392	16.52	22,996
33	2,916	37.98	110,750	53	1,123	15.47	17,373
34	3,044	36.85	112,171	54	1,007	14.34	14,440
20-34	49,611		2,165,991	20-54	89,621		3,236,478
35	3,234	35.70	115,454	55	1,365	13.20	18,018
36	2,761	34.51	95,282	56	1,153	12.06	13,905
37	2,591	33.31	86,306	57	1,075	10.89	11,707
38	2,884	32.09	92,548	58	1,011	9.72	9,827
39	2,854	30.89	88,160	59	1,184	8.59	10,171
				60	1,106	7.51	8,306
20-39	63,935		2,643,741	20-60	96,515		3,308,412

TABLE XIII.

TABLE SHOWING THE CAPITALIZED OR PRESENT VALUE OF THE TOTAL LOSS, COMPUTED ANNUALLY AT 5%, AND THE EQUIVALENT ANNUAL LOSS, DUE TO TUBERCULOSIS ON THE MALE POPULATION BETWEEN AGES 20 AND 60, FOR EACH COUNTY IN THE STATE OF MICHIGAN, ALL COMPUTED ON

THE BASIS OF A WEALTH PRODUCING CAPACITY OF \$100 PER ANNUM UNTIL AGE 70.

County.	Annual Loss.	Total Loss.	County.	Annual Loss.	Total Loss.
Alcona	\$ 2,779	\$ 50,739	Kent	\$ 64,958	\$1,185,846
Alger	3,546	64,733	Keweenaw	2,552	46,589
Allegan	18,512	337,947	Lake	2,461	44,929
Alpena	9,459	172,683	Lapeer	12,873	235,011
Antrim	7,769	141,833	Leelanau	5,385	98,311
Arenac	4,940	90,179	Lenawee	22,556	411,777
Baraga	2,740	50,028	Livingston	8,914	162,739
Barry	10,394	189,743	Luce	2,216	40,456
Bay	29,796	543,954	Mackinac	4,234	77,304
Benzie	5,372	98,074	Macomb	15,543	283,751
Berrien	23,107	421,840	Manistee	12,982	236,993
Branch	12,339	225,253	Marquette	19,370	353,617
Calhoun	24,473	446,778	Mason	9,313	170,024
Cass	9,515	173,700	Mecosta	9,646	176,089
Charlevoix	8,076	147,441	Menominee	13,172	240,466
Cheboygan	8,558	156,233	Midland	7,116	129,907
Chippewa	10,953	199,959	Missaukee	5,171	94,397
Clare	4,423	80,743	Monroe	15,706	286,733
Clinton	11,916	217,561	Montcalm	15,944	291,070
Crawford	2,007	36,644	Montmorency	1,827	33,358
Delta	13,982	255,256	Muskegon	17,606	321,412
Dickinson	9,504	173,497	Newaygo	9,002	164,331
Eaton	14,440	263,608	Oakland	21,464	391,820
Emmet	8,731	159,401	Oceana	8,638	157,690
Genesee	20,046	365,951	Ogemaw	4,556	83,182
Gladwin	4,261	77,795	Ontonagon	3,777	68,951
Gogebic	8,802	160,689	Osceola	9,099	166,110
Grand Traverse	11,108	202,788	Oscoda	1,069	19,516
Gratiot	14,579	266,149	Otsego	3,877	70,781
Hillsdale	13,906	253,867	Ottawa	20,293	370,457
Houghton	35,178	642,214	Presque Isle	5,479	100,022
Huron	16,896	308,452	Roscommon	947	17,297
Ingham	21,063	384,519	Saginaw	40,409	737,712
Ionia	16,350	298,490	St. Clair	26,043	475,443
Iosco	5,093	92,974	St. Joseph	10,683	195,029
Iron	4,612	84,199	Sanilac	16,895	308,435
Isabella	11,594	211,666	Schoolcraft	4,646	84,809
Jackson	21,859	399,054	Shiawassee	15,914	290,528
Kalamazoo	23,263	424,687	Tuscola	17,216	314,296
Kalkaska	3,949	72,086	Van Buren	16,463	300,541
			Washtenaw	21,606	394,429
			Wayne	181,224	3,308,412
			Wexford	9,737	177,767

THE NEEDS OF MICHIGAN IN THE FIGHT AGAINST TUBERCULOSIS.

ALDRED SCOTT WARTHIN, M. D.,
Ann Arbor.

Thanks to the far-seeing wisdom of a small group of men who have at different times been associated with the Michigan State Board of Health, our state was one of the first to take up theoretically the campaign against tuberculosis. The compulsory reporting of tuberculous cases was early proposed and fought over in Michigan, and as early as 1895 an act was passed providing for the teaching in the public schools of the knowledge concerning the dangerous communicable diseases. And finally the State Sanatorium at Howell was established. The State Board of Health has been faithful in sending out its bulletins, and its tuberculosis placards posted throughout the state have been of great educational value. Certain towns and cities have passed anti-spitting laws. What other anti-tuberculosis work has been accomplished in the state has been the result of private initiative, either of local anti-tuberculosis societies or of the State Association for the Prevention and Relief of Tuberculosis, and while theoretically early in the field of anti-tuberculosis work the state at the present time is practically far behind twenty other states. In what way I hope to show briefly.

In the first place the people of Michigan are apathetic, they do not realize the importance of the home problem, and this is true because the true significance of the existence of tuberculosis has not been brought home to them, in other words, they have not been educated to a comprehension of the ravages

of this disease and the financial loss thereby entailed. Unless the great body of the people can be made to appreciate the meaning of this disease and the methods of its prevention very little can be accomplished in controlling or exterminating it. The first and most essential feature of the anti-tuberculosis campaign is, therefore, the education of the people concerning the prevention of disease. While the state does this theoretically by the Act of 1895, in which, by the way, tuberculosis is not specifically stated, it is my belief that this law is practically a dead letter. The State Board of Health sends out its teachers' bulletins to the school teachers, a large per cent of these go at once to the waste-basket, and if the letter of the law is occasionally fulfilled by the reading of these bulletins in the schools, it is usually by teachers who have no conception of the significance of what they are reading and the educational results are practically nil. Here and there exceptions are found, and these, I believe, are increasing. In so far as the public schools are concerned more definite and specific tuberculosis literature should be supplied in the form of suitable primers, text-books and illustrated talks. The teacher must himself be instructed, and suitable lectures by men of the medical profession should be incorporated into school work. A dozen other states are ahead of Michigan in laws relating to the specific instruction on tuberculosis in the public schools. In Michigan we should either enforce the Act of 1895

with particular reference to tuberculosis or pass a new one framed particularly to meet the present needs.

Tuberculosis education in the public schools is but a part of the educational campaign that must be pushed at present. In every village, town and city of the state the people who are out of the schools must be brought face to face with the meaning of tuberculosis. This the state is not doing and cannot do at the present. Hence the great need of a State Anti-tuberculosis Association with its local branches. Until the state can take over this work, as I believe it will ultimately do, the State Association with its local branches must be the great educational factor. And herein lies, in our state, a tremendous field of activity. The distribution of literature, the illustrated lecture, the tuberculosis exhibit, the posted placard, the constant presentation before the public of the problem in all of its various phases—all these things constitute a mighty work to be done in the education of Michigan. My own opinion of the function of the state and local associations is that it is pre-eminently educational at the present time. *Education, more education and still more education.* As secretary of the State Association I have been repeatedly asked as to what good the State Association will be to the local branches. The local associations must realize that what is needed now is not the distribution of eggs and milk to the tuberculous poor or the payment of the railroad expenses of some needy tuberculous patient to Colorado or New Mexico or the consumption of all the local financial energy in the provision of a district visiting nurse, but the conservation of all energies and their concentration upon the fundamental necessity of the anti-tuberculosis campaign. The broader aspects of the problem must be first attacked. For instance, the City of Detroit raised about \$12,000 by its tuberculosis tag-day. If

that money is to be wholly spent for the relief of Detroit citizens who are now or may soon be infected with tuberculosis, that money will be, to my mind, largely wasted. No mere feeling of sentiment or sentimentality should enter into the disposition of funds collected by local associations. We have before us the vital fundamental problems of the state. These are first of all, the education of the people and the passing of such anti-tuberculosis laws as will permit of local effective attempts to exterminate the disease. Detroit is a very large part of the State of Michigan. What greater good could Detroit do for its citizens than to contribute money to spread the educational propaganda to secure the passage of laws concerning the prevention of tuberculosis and the safe-guarding of the milk supply, to secure additional state sanatoria for advanced cases, etc., that is, to make the greater effort to prevent the development of the disease within the State of Michigan. What Detroit, Kalamazoo, Houghton County or Grand Rapids might thus do with the funds they have collected would be of lasting benefit, not simply to the state, but to themselves.

How are these broader problems to be solved and by whom? The state does not do it, and until the tuberculosis campaign comes under state or federal control the campaign in Michigan, as in other states, must be directed by a State Tuberculosis Association made up of laymen and physicians who appreciate the significance of such a campaign. For five or ten years, perhaps, at least until the people in Michigan are so educated that the state is forced to take up the problem, the State Association must carry on the work. It has been in the field now for one year and is developing slowly—too slowly for a state possessing the educational reputation that Michigan possesses. Thirty local associations have been formed; out of 120 physicians asked

to form local branches only 30 in the year have responded. This indicates a surprising apathy on the part of the physicians of our state. Indeed, my experience as secretary during the year leads me to believe that it is the laymen who are awakening to an appreciation of the significance of tuberculosis. The fact that prevention is possible, and much more certain than cure is gradually filtering into the minds of the population at large, and if the medical profession does not take the lead in these great movements it may expect to see certain things that it has considered peculiarly its own pass out of its hands. Fortunately many physicians do realize this.

The immediate problem is to put the State Association on a sound basis of organization and support. It should have permanent headquarters and a paid secretary or assistant secretary. Already the work devolving upon the secretary is greater than any one who has active professional duties of his own can carry on. During the coming year a local branch should be established in every town in Michigan. In the smaller villages a local committee of five or ten would be sufficient, but in order to carry on the work necessary here in our state a state membership of 5,000 must be obtained. The greatest need in Michigan is, therefore, the completion of the organization of the working body, the State Association. All our efforts should be directed during the coming year to a realization of this.

Of immediately vital interest is the passing of a state tuberculosis law by the present legislature. This the State Association is expecting to bring about. The law proposed is identical with the New York law and is regarded by experts as the best in the country. At the Congress it was given third prize for the reason that it had taken its best features from the state laws of Wiscon-

sin and Maryland, which were given first and second prizes respectively. The people of Michigan may ponder on the greater progressiveness of our sister state, Wisconsin. Michigan has no tuberculosis law, Wisconsin's was given first prize by the International Congress. It is the duty of every physician in Michigan to write to his legislators urging the immediate passage of this law. Until such a law is passed much of our anti-tuberculosis work will be without result.

The great lesson of the Congress was prevention. Segregation of the open tuberculosis case, either in the family or institutional is absolutely necessary if we shall conquer this disease. The open case of tuberculosis, that is, one with sputum containing tubercle bacilli is a menace to the community as a focus of infection. If he is an intelligent individual he may make himself an element of very slight danger, if he is not, he becomes an active and dreaded source of danger to all with whom he comes in contact. And against such a danger society has the right of demanding protection, even by force, if necessary. Out of 1,160 poor tuberculosis families investigated by La Motte only 9 were capable of being adequately careful, 143 were fairly careful, 719 were careless, and 289 were grossly careless. Such a condition exists here in Michigan among the great majority of our tuberculous citizens. They are a constant menace to us and particularly to our children. Against such a danger more radical measures than education must be adopted. We must have greater facilities for segregation. Sanatoria for incipient cases are not in any way so important at this stage as sanatoria for advanced cases. And the State of Michigan does not furnish a single institution of this kind. At Howell only carefully selected incipient cases are taken, the infinitely more important ones, so far as the good of the commun-

ity is concerned, are left to spread the disease. Why save a few at the expense of the many? Personally, I believe that the state should provide sanatorium treatment for the incipient cases among the poor who are unable to give themselves proper treatment; but for the incipient cases among the well-to-do, no sanatorium is needed, they may be treated at home, or if necessary, there should be properly licensed private sanatoria for their accommodation. But the state should supply an adequate number of sanatoria for advanced or open cases occurring among the poor, both for the protection of the public and the good of the patient. Such cases among the well-to-do should be sent to properly licensed sanatoria provided for such cases. This is one of the most crying needs of the state.

As Mrs. Bartlett-Crane has shown the alms-houses of our state are for the greater part foci of infection. Open cases of tuberculosis are herded in many of these without the slightest attention paid to the prevention of the spread of the disease, either among the inmates of the institution or the inhabitants of the community in which the almshouse is located. Such a condition of affairs is a disgrace to our commonwealth. The tuberculous paupers should be gathered together from all counties, and segregated at the expense of the state in some tuberculosis hospital. Such a hospital could be conveniently and economically established in connection with the State Hospital of the University at Ann Arbor. A double good would thus be accomplished, the public would be protected, the patients would be infinitely better off, and the cases could be utilized as clinical material. Scientific study of active cases of tuberculosis was never so important as now, particularly along the line of therapeutics, and the state at the present time does not offer the slightest opportunity in this direction.

The State of Michigan could afford to spend more than a million dollars yearly in the anti-tuberculosis campaign. Five years of such expenditure would see a reduction by half of tuberculosis morbidity and mortality in our state. The statistics of Professor Glover show the minimal cost to the state of the existence of this disease in our midst. These figures may stagger the mind of one brought face to face for the first time with these facts. Against Dr. Glover's estimates not the slightest claim of exaggeration can be advanced. To one who has considered the problem they appear, on the contrary, too small. As he has pointed out they are based only upon a portion of the population, and such factors as increased expense of living, medical treatment, loss to the state from cattle tuberculosis, etc., are not included. Moreover, the cases of tuberculosis reported in Michigan do not represent at all the actual number of deaths in this state due to this disease. Many of the cases reported as pneumonia are in reality cases of tuberculosis. In the State of Maryland the total loss from tuberculosis each year was estimated by the Maryland Tuberculosis Commission to be not less than ten million dollars. Dr. Wilcox estimated the total loss due to tuberculosis in 1907 from all sources to be not less than \$65,000,000. Professor Fisher estimated the total cost of tuberculosis in the United States to exceed \$1,100,000,000 per annum. The money cost of tuberculosis, including capitalized earning power lost by death, exceeds \$8,000 per death. On such a basis the 2,412 deaths from tuberculosis occurring last year in Michigan would represent a financial loss of \$19,296,000. It is very probable that the actual economic loss from all sources annually in Michigan resulting from the presence of tuberculosis is between forty and fifty millions of dollars. The relatively small

loss due to the quarantine resulting from the presence of foot and mouth disease in our state has created a large amount of complaint. Against this greater loss of human life and capital what complaints are the people making? The following quotation from Gov. Hughes, of New York, is to the point here: "If we had through the misfortune of war, or the sudden rise of pestilence, or through some awful calamity, the destruction of life that annually takes place on account of this disease (tuberculosis), we should be appalled, and mass meetings would be held in every community and demand would be made that the most urgent measures should be adopted. It is only because we are accustomed to this waste of life and are prone to think that it is one of the dispensations of Providence that we go on about our business, little thinking of the preventive measures that are possible." Modern medical science teaches us that tuberculosis is no inevitable dispensation of Providence and shows us that the disease is wholly unnecessary and preventable. Surely in the face of such knowledge a state whose people can become more disturbed over the loss resulting from the necessary quarantine due to the presence of foot and mouth disease than over the much more appalling loss due to tuber-

culosis is, indeed, in need of an educational campaign to arouse it to a conception of the proper proportion of things.

In conclusion, the needs of Michigan in so far as the world's fight against tuberculosis is concerned are first: Proper organization and support of the State Tuberculosis Association until the fight against tuberculosis passes into state and federal hands; secondly, the vigorous pushing of an educational campaign to arouse the people from their apathy concerning tuberculosis; thirdly, the immediate passage of a tuberculosis law; fourthly, proper provision for the adequate teaching of hygiene in the public schools; fifthly, the provision of sanatoria for the open cases of tuberculosis; sixthly, the licensing and supervision of private sanatoria for the well-to-do; seventhly, adequate care of the tuberculous cases in the almshouses; eighthly, the protection of the milk supply from tuberculous infection. These things the people of the state must do or fall behind the rest of the civilized world. A vigorous campaign pushed along these lines for the next five years will, I firmly believe, result in a great reduction of cases of tuberculosis in this state and save to the commonwealth millions of dollars.

Malignancy of stomach trouble is not suspected often enough, particularly by the general practitioner. In cases with indefinite symptoms of dyspepsia apparently without reason, and with progressive tendencies we should not be too ready with the diagnosis of "chronic gastritis" or "nervous dyspepsia" but should bear in mind the possibility of an incipient cancer.

We suspect under these circumstances malignancy in patients between 40 and 70, but do not forget that it occurs not so seldom before 30. If we suspect cancer we should carry out those ex-

aminations which are of established value, some of them repeatedly in order to reach an early diagnosis; special attention given to active peristalsis, to the microscopical findings on fasting stomach, to the gradual disappearance of hydrochloric acid, and appearance of lactic acid, also the Salomon-test. We should never omit to search for occult blood in the stool after meat-free diet. If within 4 weeks the cancer cannot be excluded and symptoms continue on their progressive line, probatory laparotomy should be urged. An early diagnosis means radical operability.—Kast, *Am. Med.*, Dec., '08.

The Journal of the Michigan State Medical Society

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FEBRUARY

Editorial

The Plan for Medical Defense, which has been worked out by the Committee, appointed at Manistee and of which Dr. F. B. Tibbals, of Detroit, is chairman, was submitted to the Council at the January meeting, and after thorough discussion was unanimously adopted. The plan necessitates a number of amendments to the by-laws; these amendments were recommended by the Council for consideration by the House of Delegates. Before the matter comes up at the next annual meeting, every County Society will have ample opportunity to study the details and instruct the delegates.

In brief the plan provides:

(1) An initial assessment of \$1.50 from each member for the year 1910.

(2) One dollar per year thereafter.

(3) A Standing Committee on Medical Defense, consisting of an Executive Board of five and one member from each component county society, not otherwise represented. The Executive Board shall be elected for five years; the other members for one year.

(4) The Executive Board and other members of the Committee are all to be elected by the Council.

(5) The Chairman of the Executive Board, also elected by the Council, for

one year, is to be the custodian of the Defense Fund and to give bond to the Council. He is also to receive some compensation set by the Council.

(6) The Executive Board will engage, by the year, a competent firm of attorneys. Their duties shall be to defend any member not in arrears, when sued or threatened with suit for civil malpractice.

(7) Dues must be paid before June 1st, the league not defending any member in a suit, the cause of which arose while in arrears.

(8) It is to be especially noted that the league assumes two years' back liability on every member, provided suit has not been threatened or begun before joining the society or before the league is established. It also assumes the defense of any suit brought against the estate of a deceased member.

These proposed amendments should be carefully read by every member. They are as follows:

Chap. VII., Sec. 3, third line, after "funds," insert "except the Defense Fund."

Chap. VIII, Sec. 6, line 27, amend to read: "It shall be the further duty of the Council to hold the official bond of the Treasurer and the Chairman of the Executive Board of the Committee on Medical Defense for the faithful execution of their offices, annually to audit and authenticate their accounts," etc.

Chap. VIII, Sec. 6, last sentence, after "Treasurer" insert "or the Chairman of the Committee on Medical Defense."

Chap. IX, Sec. 1, add "A Committee on Medical Defense."

Chap. IX, add as subsequent sections.

Sec. 6. The Committee on Medical Defense shall consist of an Executive Board of five and also one member from each component society not otherwise represented, all to be elected by the Council. The Executive Board, three of whom shall be from Wayne County, shall be elected for one, two, three, four and five years respectively, and thereafter one member shall be

elected each year, to hold office for five years. All other members of the Committee to be elected for one year.

The election of members of the Board and Committee shall be made by the Council at the time of the Annual Session of the Society and shall go into effect on the first day of the following January.

Sec. 7. The Council, at the same meeting, shall elect one of the five members of the Executive Board as Chairman, whose term of office shall be for one year from the first of January following. He shall act as Chairman of the Executive Board and of the entire Committee, and shall be the custodian of the Defense Fund. No disbursement shall be made from the Defense Fund without the signatures of the Chairman of the Executive Board and the Secretary of the State Society. Money can be drawn from the Defense Fund only by an order of the Council signed by the Chairman and the Secretary thereof.

In order that the Chairman may be able to give the requisite amount of time to his duties, it is desirable that he should receive some compensation. The amount of his salary shall be fixed by the council.

Sec. 8. The Executive Board shall report to the Council at its annual meeting, giving full details of the work of the committee, and a detached statement of income and disbursements.

It shall engage by the year a competent firm as general attorneys and fix their compensation. Their duties shall be to defend any member of the society not in arrears, when sued or threatened with suit for civil malpractice, or to supervise such defense through a local attorney.

Sec. 9. The defense fund, consisting of an initial assessment of one and one-half dollars from each present and future member of the society, and a subsequent assessment of one dollar for each year after the first, shall be collected by the state secretary, through the county secretaries, and paid at least monthly as collected to the chairman of the defense committee.

Sec. 10. Members in arrears after June 1st shall not be entitled to defense for any suit, the cause of action of which arose while in arrears, and any member sued or threatened before joining the Society or before the organization of this Defense Fund must pay the actual cost of defense in such suit.

(In the event, however, of the Wayne County Defense League turning over its fund, said fund

being larger than the per capita initial assessment of the Wayne County Medical Society, the Defense Committee will assume the defense of any actions pending in Wayne County.)

Sec. 11. With the exceptions above noted the Defense Committee shall undertake the defense of any member of the Society sued or threatened with suit for civil malpractice, regardless of the time when the alleged cause of action arose, and shall also defend any action for civil malpractice against the estate of a deceased member, provided he or she while living has conformed to the foregoing requirements.

Sec. 12. In the event that during any one year the demands upon the Defense Fund be large enough to exhaust it, the Council shall be authorized to loan sufficient funds from the treasury of the State Society to meet the contingency.

Sec. 13. It shall be the duty of any member of the Society threatened with action for civil malpractice to confer at once with the member of the Defense Committee from his component Society and with his aid prepare the case and forward the same to the chairman of the Defense Committee. He must agree not to settle or compromise his case without the consent of the Executive Board and the General Attorneys. He may recommend, in conjunction with the local member of the Defense Committee the best available local attorney, but the authority to engage the services of local attorneys shall lie with the Executive Board and their General Attorneys. The local attorney chosen shall enter the appearance of his client and undertake his defense under the supervision of the General Attorneys.

Sec. 14. All attorneys' fees and court costs will be paid from the Defense Fund, and defense carried through all Michigan courts, but under no circumstances shall this fund be liable for any damages declared against an unsuccessful litigant.

It is designed by means of this Defense Fund to furnish a fighting defense against the usually unjust menace of civil malpractice by providing attorneys especially competent in this line of work, and paying all expenses incident thereto.

Each issue of the Journal, until the annual meeting, will contain information on the subject. It is the desire of the Council that every member shall fully understand the plan, and before it comes up for adoption, a referendum

vote by mail will be taken, in order that the sentiment of all the members may be learned. The chairman of the Committee will gladly answer any questions which may come up, either by personal letter or through the columns of the Journal.



Co-operation of Family Physician and Ophthalmologist.—In co-operation, two or more persons work together for a single purpose. Since this calls for a common knowledge not possessed by the family physician and ophthalmologist, they cannot co-operate. The average family doctor frankly says that he knows nothing of eye diseases, but refers such cases as he recognizes to either the optician or ophthalmologist, if they be available. His unrecognized cases must suffer the natural effects of his ignorance, be it local or general distress, temporary or permanent loss of vision. Some drift towards persons having a layman reputation for treating disabled eyes, without reference to qualifications. The ophthalmologist can do nothing to reach either of the classes, other than permit the attractive power of his reputation among the laity, to have its natural course; thus (broadly speaking) no co-operation between family physician and ophthalmologist now exists, because the former lacks the knowledge imperative therefor.

To start the machinery of professional education operating towards equipping the family physician with this knowledge, resolutions were adopted by the last meeting of the Michigan State Medical Society. These directed the Council to take the matter up with their county societies, if perchance some doctor might see and embrace his opportunity to broaden his field of practice, and increase his income. It was also instructed to confer with the State Board of Registration, as to making its exam-

inations more definite as to subjects and amounts of the same, so that the candidates could master and practically apply them in practice.

Commenting on these resolutions, the *Optical Journal* says, "the attempt to educate physicians to co-operate with oculists will prove a dismal failure." It further remarks that the medical profession lost a golden opportunity, in failing to establish such co-operation while it had a chance. The last remark is an historic fact; the first remains to be proved.

Co-operation necessarily follows the perception, by both parties, of a common advantage in such co-operation. It needs little astuteness for family physician and ophthalmologist to see that their co-operation would give them the practice now in the hands of laymen. The money value of this runs into the hundreds of thousands of dollars, which the profession needs and by co-operation can secure.

The standing of the profession with its clients will become more solid as laymen are displaced by educated physicians; this standing is a valuable asset, and the securing of it an incentive to co-operation. Finally it is *right* that educated physicians should care for all disabled eyes.

Is it urged that family physicians are inadequate to the mastery of the practice now in the hands of opticians; this is absurd, as the educated can surpass the uneducated in both the acquisition of needed knowledge and pleasing the people. Besides, family physicians are already practicing "limited ophthalmology," because then they will have friends at "court," able to pick up all eye cases at their beginnings, treat the simple ones and refer the complex to the specialist; thus all eye patients will have the service of educated physicians—family physicians co-operating with ophthalmologists.

The thing to be done, now, is to

assure the family physician that he can master and practice "limited ophthalmology" with success, and encourage him to make a beginning at once.



New York's Tuberculosis Law. The act defining the powers and duties of the health officers which was passed by the New York Legislature last session, has been pronounced by experts as the best one yet drafted, although, in the recent contest, Wisconsin received first prize and Maryland second. The New York Law received honorable mention because it had taken its best points from the two states mentioned, the judges holding that it was right to give credit to the two states originating the excellent features of the act.

The Legislative Committee of the *Michigan State Association for the Prevention and Relief of Tuberculosis* will attempt to have passed, in this state, a law, whose provisions will be largely based on the New York act. This act has many excellent features and is to be heartily commended. Its passage will aid greatly in the campaign which the Society is pushing, with the aim of reducing the number of cases of tuberculosis in the state and finally stamping it out altogether.

The essential provisions of the New York Law are as follows:

1. Tuberculosis is declared an infectious and communicable disease. It shall be the duty of every physician to report, in writing, every case, within 24 hours after a diagnosis is made. Report to be made to the health officer of city, town or village. Every tuberculous patient in a hospital must be reported.

2. Every health officer, when requested, must make or cause to be made a microscopic examination of sputum forwarded to him. He must report the result of the examination to the physician in charge of the patient. This is to be done free of charge.

3. Every health officer must keep records in a

register, of patients having tuberculosis. This register shall not be open to the public for inspection.

4. When apartments recently occupied by a tuberculosis patient are vacated, the physician or (if there be no physician) the owner must notify the health officer, and not allow the apartments to be again occupied until they are disinfected.

5. The health officer is required to disinfect such premises. If he determines that premises need thorough cleaning and renovating, he shall serve notice on the owner to do so.

6. If such renovating is not begun within 48 hours, the health officer may placard the premises as follows:

"Tuberculosis is a communicable disease. These apartments have been occupied by a consumptive and may be infected. They must not be occupied until the order of the health officer directing their disinfection or renovation has been complied with. This notice must not be removed under the penalty of the law except by the health officer or other duly authorized official."

7. Patients may be compelled by the health officer to dispose of sputum or other secretions in an approved manner.

8. It shall be the duty of a physician attending a patient having tuberculosis to take all proper precautions and to give proper instructions to provide for the safety of all individuals occupying the same house or apartment, and if no physician be attending such patient this duty shall devolve upon the local health officer, and all duties imposed upon physicians by any sections of this act shall be performed by the local health officer in all cases of tuberculosis not attended by a physician, or when the physician fails to perform the duties herein specified, and shall so report.

9. Physicians must report, on special blanks, what precautions have been taken. When such report is satisfactory, the health officer shall issue a warrant for \$1.00, payable to the physician.

10. The penalty for failure to report shall be a fine of not less than \$5.00 nor more than \$50.00.

11. Recoveries must be reported.



The study of medical biography is a pleasant and profitable means of employing leisure time. Not every man,

in fact few, is located near large libraries where first hand material may be obtained, yet quite a respectable little library of medical biography can be accumulated at very moderate cost. Books, like Walsh's "Catholic Churchmen in Science," Thorpe's "Life of William Pepper," Osler's "Alabama Student," Putnam's "Life of James Jackson," or Kelly's "Walter Reed and Yellow Fever" are well worth reading and having at hand where they may be picked up and reread from time to time. Many other similar volumes are obtainable.

There is a certain inspiration which comes from the perusal of the achievements and the trials of those who fought the battles which most of us are fighting. The insight into the lives of such men as Bartlett, Beaumont or Reed gained from their biographies, together with the knowledge of the medical affairs of their times acquired from such books, has a very distinct broadening influence and adds much to the interest of our daily work. An occasional paper along the line of medical history or biography would be a pleasing addition to the program of many of the county societies for there are men in every county society who can write a biographical paper and write it well.



September fifteenth and sixteenth are the dates set for the next annual meeting of the State Society. Kalamazoo is the place. We should have the largest attendance since the Detroit meeting of 1903. Plan now to arrange your affairs so that you may attend.



June eighth to eleventh are the dates and Atlantic City the place, of the 1909 meeting of the American Medical Association.

Book Notices

William Pepper, M. D., LL. D., Provost of the University of Pennsylvania. By Francis Newton Thorpe. 6½x9½ in., 552 pages, illustrated; cloth, \$3.50 net. The J. B. Lippincott Company, Philadelphia, 1904.

Writing the life of Pepper was evidently a congenial task to his biographer, for the completed work rings with a true appreciation of this great man. Professor Thorpe was associated with Pepper for thirteen years, during which time the former was fellow and professor of history at the university. The material from which the biography is compiled consisted of a mass of letters—for Dr. Pepper was a voluminous letter writer, the personal knowledge of the author and the files of the contemporaneous newspapers. The record extends through nearly forty years, during the last twenty-five of which Pepper was the most conspicuous figure in the intellectual and philanthropic life of Philadelphia.

The work is divided into three parts: 1. The Physician and Medical Writer; 2. The Educator; 3. The Citizen. It is illumined by eleven excellent illustrations.

As Rich has said in his article in this issue of the JOURNAL, it seems hardly believable that any one man could have accomplished so much in one short lifetime. Not only was Pepper pre-eminently great as a physician and teacher, but he was also possessed of rare executive ability, making him a leader in and an organizer of every project to which he turned his attention. His organization of the University Hospital, his work as medical director of the Centennial Exposition, his achievements as a physician and writer, and the organization of the Pepper Clinical Laboratory are discussed in the first section.

Part II is devoted to a recital of the marvelous growth of the University of Pennsylvania from 1862 until 1894—a history unique in university annals, if exception be made of two instances where great schools have sprung up as the result of very large endowments. Had there been no Pepper, it is almost safe to say that the University of Pennsylvania would be today what it was at the time of the war, a great medical school with other departments of merely local reputation.

The history of the Free Library of Philadelphia, of the University extension movement, of the Museum of Science and Art, and of the Industrial Museums, in all of which Dr. Pepper was

the leader is related in Part III. An interesting chapter, especially to all those who knew Dr. Pepper, is the one on "Incidents and Characteristics."

The book is a valuable one from the viewpoint of American History of Medicine, as well as from the history of education. The lesson to be learned from Dr. Pepper's life—that of constant application and industry, is well set forth. Altogether it is a delightful book for the physician's library.

An Alabama Student and Other Biographical Essays. By William Osler, M. D., F. R. S., Regius Professor of Medicine in Oxford University. Octavo, 335 pages; illustrated. Oxford University Press, American Branch, 29-35 West 32nd St., New York, 1908.

Osler has always held that not only is the study of the lives of distinguished medical men an inspiring recreation, but also, that it possesses, as well, much educational value. Few medical men are gifted, as is Osler, with the genius to pick out the essentials in the life of a notable, and draw therefrom those lessons which are helpful to others. He has this ability to a marked degree and the result is that one cannot fail to catch a bit of the enthusiasm which dominated all the subjects of his biographical essays. In this book, he has collected a series of thirteen essays, for the most part published before.

The "Alabama Student" was Dr. John V. Bassett, of Huntsville, who in 1836, visited Paris, saw much of the work of Andral, Velpeau, and Broussais, and wrote interesting letters concerning them. "Thomas Dover," of Dover's powder fame, is the subject of the second essay. It is not generally known that Dover was a buccaneer and the man who rescued Alexander Selkirk, the original of "Robinson Crusoe." "John Keats, the Apothecary Poet," is one of Osler's masterpieces. It forms the third essay. Oliver Wendell Holmes, whom Osler knew well, is paid a touching tribute, in the fourth essay; the author says that he occupies a niche in his affections with Charles Lamb and Oliver Goldsmith. A large part of the essay deals with Holmes' controversy with Thomas and Meigs over the contagiousness of puerperal fever. "John Locke, the Philosopher-Physician," the friend of Sydenham, is a somewhat less interesting paper.

Elisha Bartlett and his book on fevers are too little known and appreciated by the profession; the man was a keen observer and a writer of power, the book a valuable one even at the present day. Of particular interest to Michigan

readers is the next essay on "A Backwood Physiologist" portraying the life and the work of William Beaumont.

Osler has always been an ardent admirer of Louis, and keenly appreciative of the influence which that master had on American medicine. The article on this subject is most interesting.

"William Pepper" contains some things which are new and read in connection with Rich's appreciation of Pepper in this issue of the JOURNAL and with Thorpe's Life of Pepper, it is particularly interesting. Another essay which will be read with pleasure by all Pennsylvania graduates is that on "Alfred Stillé." Osler's essay on Sir Thomas Browne, the next in order, is well known. "Fracastorius" and "William Harvey" complete the volume. The latter was the Harveian Oration, delivered at the Royal College of Physicians, London, in 1906. At the time, the *Lancet* remarked that the amount of new material in the essay was wonderful, considering the amount of literature existing on the subject.

The book is most attractively bound in red cloth. The English book paper is excellent, and there are a number of splendid portraits.

Surgery: Its Principles and Practice. In five volumes. By 66 eminent surgeons. Edited by W. W. Keen, M. D., J. J. D., Hon. F. R. C. S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Volume IV. Octavo of 1194 pages, with 562 text-illustrations and 9 colored plates. Philadelphia, W. B. Saunders Company, 1908. Volume: Cloth, \$7.00 net.

Each succeeding volume of this system is a delight to the recipient, for thus far he has not been disappointed in his expectations. The list of contributors given in the prospectus promised a noteworthy work, and it is gratifying to see that the promise has been fulfilled.

This volume contains: "Hernia," by Coley; "Surgery of Rectum and Anus," by Abbe; "Genito-Urinary Surgery," by Edsall, Ransohoff, Lewis, Cabot, Young, Horwitz and Bevan; "Surgery of the Intestine," by Van Hook and Kanaval; "Appendix," by Murphy; "Surgery of the Ear," by Dench; "Surgery of the Eye," by De Schweinitz; "Military Surgery," by O'Reilly; "Naval Surgery," by Rixey; "Tropical Surgery," by McCaw, and "The Influence of Age, Race and Sex in Surgical Affections," by Rodman.

Our space forbids a review of all these chapters, but the above list will demonstrate that many of them are contributed by men whose

names have been associated with the special subjects. The teaching here found may be depended upon as the latest.

There are three more volumes to appear.

Surgery. By John Allan Wyeth, M. D., LL. D., Professor of Surgery in the New York Polyclinic Medical School. Octavo, 816 pages, 864 illustrations. Marlon Sims Wyeth and Co., Publishers, New York, 1908. \$6.00, prepaid.

Many readers will recall Wyeth's "Text-Book on Surgery" which appeared in 1887, and which subsequently went through three editions. The last appeared in 1900. Later Wyeth acquired the rights from the publishers and has now prepared an entirely new work. Many new illustrations have been added, a number of them in colors. All are well chosen.

The book is particularly rich in minor surgery, although the technic of major operations is sufficiently comprehensive for ready consultation. Less important matter is discussed in foot notes of smaller print.

The work is one of the best of the single volume surgeries. Paper, press work and binding are good.

A Text-book of Physiology. For Students and Practitioners. By George V. N. Dearborn, A. M., (Harvard), Ph. D., M. D. (Columbia), Professor of Physiology in Tufts College, Medical and Dental Schools, Boston. Octavo, 550 pages, with 300 engravings and 8 colored plates. Cloth, \$3.75 net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

This new treatise on physiology is designed especially "for medical and dental practitioners and students." It claims originality in being the first book of the kind to recognize the more and more insistent demands of the mental process." These statements in the author's preface appear to be borne out by the text, which includes the usual subject matter of physiology, with a little more than the usual sidelights of comparative zoology. The author's treatment of the subject is interesting, and in some ways unique; in style he is a trifle verbose, at times quite conversational, he occasionally quotes poetry, and his pages are not without touches of humor. These facts do not detract from the evident seriousness of the writer and his qualifications for imparting knowledge; indeed, they may augment the appeal of the book to a certain class of readers. It is a compend of useful and correct information, served in readable form; it is not a tome of vast and ultimate knowledge, nor likely to be sought

as a work of reference. A good series of experiments is outlined, and a list of subjects for student essays and conferences, and the usual tables.

The Ready-Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M. D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. Sixth edition. 12mo., 737 pages, with 99 engravings and 4 plates, in colors, and monochrome. Cloth, \$3.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1908.

Since the previous edition of this book, the author has been elected to the chair of dermatology in the College of Physicians and Surgeons, New York. His long experience as a teacher makes him familiar with the needs of students, and assures that his work will be both concise and complete. Indeed, conciseness is the main characteristic of his book. The "Ready Reference" feature is the arrangement of skin diseases in alphabetical order. For diagnostic purposes, there is a complete epitome of symptoms and signs.

Treatment is afforded ample space, and many tried formulas are given.

It is a most useful book to have at hand for consultation.

Therapeutics: Its Principles and Practice. By Horatio C. Wood, M. D., LL. D., University of Pennsylvania. Thoroughly revised and rewritten by H. C. Wood, Jr., M. D., University of Pennsylvania. Cloth, \$5.00, net. Philadelphia, J. B. Lippincott & Co., 1908.

Wood's Therapeutics has, for thirty years, been the student's vade mecum. It has passed through fourteen large editions and is probably to be found on the book shelves of more physicians than any other one book, unless it be Gray's Anatomy.

The alterations in this edition are more extensive than in any previous edition for many years. An effort has been made, and we think successfully, to make the book more useful for the student, without lessening its value as a book of reference. This has been accomplished by printing the fundamentals in large type, while more intricate details are printed in smaller type.

Articles on the opsonic and the ion theory have been added, every page revised to correspond to latest knowledge, and some of the chapters have been entirely rewritten. The most extensive changes will be observed in the section on cathartics and diuretics.

Long may this good old book live.

A Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A. M., M. D., Professor of Gynecology in the Northwestern University Medical School, Chicago. Fifth edition, thoroughly revised. Octavo, 806 pages, with 431 illustrations, of which 75 are in colors, and 20 full-page colored plates. Cloth, \$5.00, net. Lea & Febiger, Philadelphia and New York, 1908.

Since its first appearance, Dudley's Gynecology has been recognized as one of the best in its field. This new edition is much more than a reprint of the fourth edition, for it has been thoroughly revised. A new introduction and a new chapter on "Incontinence of Urine" have been added. There are also 40 new illustrations, making in all, 431, many of which are in color, and all of which are good.

As in previous editions, the arrangement of the text is somewhat different than in the usual text book. The ordinary mode followed is to treat the diseases of any one organ, as for example the uterus, together. Dudley has arranged diseases according to the pathological and etiological sequence, making the picture—as in gonorrheal infection—complete. This we believe is a distinct advantage.

It is the best edition yet of a very strong book.

Adenomyoma of the Uterus. By Thomas S. Cullen, M. B., Associate Professor of Gynecology in Johns Hopkins University. Large octavo of 270 pages, with illustrations by Herman Becker and August Horn. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$5.00, net.

Cullen was one of the first pathologists to recognize that adenomyoma is a distinct form of tumor, and that it produces more or less constant clinical signs. His first case was studied in 1894, and published in 1896. Since that time he has carefully examined 1,283 fibroids and discovered 73 instances of adenomyoma—5.7 per cent. These 73 cases form the basis of this monograph.

Clinically the cases are divided into three classes: (1) Adenomyomata, the uterus preserving a relatively normal contour; (2) Subperitoneal or intraligamentary adenomyomata; (3) Submucous adenomyomata. Cases are reported in detail and both the gross and the microscopic appearances illustrated by 68 as fine drawings as have ever graced a monograph. They have been faithfully reproduced in a brown tint, giving the appearance of a sepia finish. The paper, press work and binding are all that can be desired.

The book is a distinct addition to gynecological literature and will long remain a classic.

Diseases of the Nervous System, for the General Practitioner and Student, by Alfred Gordon, A. M., M. D. (Paris), Associate in Nervous and Mental Diseases, Jefferson Medical College. 437 pages, with 136 illustrations. Philadelphia, P. Blakiston's Son & Co., 1908.

The size of this volume will commend it to the student who is not seldom discouraged by ponderous tomes upon a subject usually regarded as dry and lacking in interest.

The text is plain and practical, going less into detail than the larger text-books, yet tersely stating what is essential and avoiding debatable points.

Pathology, symptomatology, and differential diagnosis are carefully and briefly emphasized as well as course, termination, prognosis, etiology and treatment.

Careful chapters on anatomy and physiology and methods of examination precede the other text.

This book ought to be distinctly helpful to the student and the practitioner who wish to get quickly and clearly at the meat of the subject of nervous diseases.

The print is clear and illustrations numerous; many of them very good.

Progressive Medicine; Vols. III. and IV., September and December, 1908. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 285 pages, with 30 engravings. Per annum, in four cloth-bound volumes, \$9.00; in paper binding, \$6.00, carriage paid to any address. Lea & Febiger, Publishers, Philadelphia and New York.

Most of the advances in medicine are of course first announced in periodicals as the quickest means of publicity. Many of them are lost to the man who does not read a half-dozen languages, and this vital knowledge would moreover be limited to very small circles were it not for the existence of mediums for universal diffusion. Progressive Medicine is one of the best of these mediums. The material selected is wisely chosen and the men who edit the various departments are authorities of recognized standing. In it the practitioner will find material which, if carefully read, will bring his knowledge to date.

The September issue contains four departments: Diseases of the Thorax and its Viscera, by Ewart; Dermatology and Syphilis, by Gottheil; Obstetrics, by Davis; and Nervous Diseases, by Spiller.

The December issue contains much of practical interest. Edsall, in his section on the Diseases

of the Digestive System, points out the clinical bearings of recent physiological researches on the stomach and of psychic influences on digestion, deals with the results of recent X-ray advances in connection with that organ, devotes 10 pages to Gastric Ulcer, Stenosis and Carcinoma, revises to date the recently developed subject of intestinal diverticula, and illuminates the hitherto obscure field of diseases of the pancreas. In the same most cursory manner we may refer to the articles on Renal Tuberculosis and Syphilitic Nephritis in the section on the kidneys, written by Dr. John Rose Bradford, of London. Blood-good, of Baltimore, has covered in a hundred pages, the real additions to practical surgery during the year. His remarks on Surgical Shock deal instructively with a common and serious condition. He devotes twenty-five pages to advances in Surgery of the Blood-vessels, a subject of especial interest at the present time, and the same may be said of his articles on Surgery of the Joints. He closes with twenty pages on Tumors, thus completing in connection with his former sections on these morbid growths, one of the most important monograph on the subject in the language. Belfield, of Chicago, covers the latest advances in the Genito-Urinary field authoritatively in thirty pages. The assistant editor, Dr. Landis, closes the year with a Practical Therapeutic Referendum, reviewing the advances in both medicinal and non-medicinal treatment, and giving due prominence to untoward results following serum therapy.

ANNUAL MEETING OF THE COUNCIL

The Council of the State Society met in Detroit on January 7th, and was attended by President Lawbaugh and eleven of the twelve councilors. The one vacant chair was on account of illness. Reports were received from the secretary and the treasurer, showing the paid membership for 1908 to be 1,883, and a balance in the treasury of \$2,847. The details of these reports will be furnished the house of delegates and published in the official minutes of that body.

Dr. W. H. Sawyer, chairman of the Committee on Legislation and Public Policy, reviewed the legislation which it is expected will come up this winter. The possibilities are a Nurses' Registration Act, an Optometry Bill, an amendment to the Osteopathic Bill and an act restricting the use of

the term "Certified Milk." The society, as such, has no bills to be presented this year.

The afternoon session of the Council was largely taken up with a consideration of the plan for medical defense, submitted by the committee, of which Dr. F. B. Tibbals is chairman.

This committee had drafted a rough sketch of the plan and submitted it to the county societies for tentative action. Thirty-three counties were heard from, 32 voting in favor of the plan, and one not voting. The original plan was to have an assessment of \$3.00 for 1910 and \$1.00 per year thereafter. It was the unanimous opinion of the Council that medical defense is the most important new work undertaken by the State Society in some years. There was much difference of opinion as to whether our membership would suffer on account of the \$3.00 initial assessment, and it was finally decided to recommend to the house of delegates certain amendments to the by-laws, providing for an initial assessment of \$1.50 and \$1.00 per year thereafter. (The details of the plan will be found elsewhere in this issue of the Journal.)

Dr. George W. Moran was re-elected treasurer and Dr. B. R. Schenck, secretary.

County Society News

Fifth Councilor District.

For the first time in its history the Fifth District Society met this year outside of Grand Rapids. On the invitation of the Ionia County Society the meeting was held at Belding, on January 14th. The physicians of Belding acted as hosts, and the members of the Montcalm County Society were guests of honor.

The following invitation was sent to all of the members in the district:

Ionia, Jan. 5, 1909.

My Dear Doctor:

Now is the winter of a doctor's life made glorious summer by the annual meeting of the fifth councillor district. You have promised yourself a vacation—take it now. Look up the time-table and go to Belding the night before, so as to be present at the opening. The fifth district expects every member to do his duty. The Montcalm County Medical Society have generously

postponed their regular meeting falling on this date, in order to be with us to make this a great day for the glory and honor of medicine in western Michigan. On the enclosed card indicate your intention to be at the meeting, and get it to the postoffice at once, as the entertainment committee wish to know how many to provide for. The banquet will be served at the famous hotelry, the Hotel Belding, and will be of the best, at a cost of \$1.25 per plate. In addition to the good things on the menu card there will be some surprises.

"An' the toastmaster 'ell git you
Ef you don't watch out."

In addition to program and banquet, a visit to the silk mills is planned. The silk industry at Belding is a wonderful thing. More silk is manufactured here than at any other place west of the Allegheny mountains. The factories are marvels of sanitary and hygienic perfection.

Come, doctor, and go with us,

Yours for a good meeting,

C. S. COPE, Sec'y,

633 W. Main St.

Ionia Co. Med. Society.

As self reliance makes a strong medical society, all the papers were by members of the district. The program, which began at 8:30 a. m., lasted until 1 p. m., and was as follows:

Presiding Officer—Dr. Ralph Spencer, Councilor.

Paper—Dr. Jas. E. Ferguson, Belding. A Plea for the Systematic Medical Examination of all School Children with Special Attention to Diseases of the Respiratory Tract.

Discussion—Dr. R. Apted, Grand Rapids.

Paper—Dr. Collins H. Johnston, Grand Rapids. "Symptoms and Diagnosis of Pulmonary Tuberculosis."

Discussion—Dr. G. W. Lowry, Hastings.

Paper—Dr. George Winchell, Ionia. "Common Sense in Medicine."

Discussion—Dr. F. G. Sheffield, Hastings.

Paper—Dr. W. H. Belknap, Greenville, "Surgery of the Thyroid Gland."

Discussion—Dr. E. D. Kremers, Holland.

Paper—Dr. Richard R. Smith, Grand Rapids. "The Diagnosis of Chronic Appendicitis."

Discussion—Dr. S. C. Graves, Grand Rapids.

Dr. R. J. Walker—Saugatuck, Mich. "Two Cases of Tri-facial Neuralgia Treated by Alcohol Injections."

Discussion—Dr. A. J. Bower, Greenville.

Dr. D. G. Cook—Holland. "A Case of Spontaneous Rupture of the Stomach. Autopsy."

Discussion—Dr. C. C. Dellenbaugh, Portland.

The *Ionia Standard*, of January 17th, gives the following account of the meeting: Belding on Thursday witnessed the largest concourse of medical men ever assembled in Ionia county. Representative physicians were present from Ionia, Kent, Barry and Ottawa counties of the fifth district, and from Montcalm of the eleventh. The scientific program was full and complete, the session lasting from 8:30 a. m. to 1 p. m. Every paper on program was read by its author and the discussions that followed were filled with "pith and point."

At 1:30 the banquet hall was thrown open. The invocation was by Rev. Jas. A. Boynton of the Episcopal clergy, himself a son and grandson of English physicians, and too, a student of medicine in earlier life.

At the banquet the following toasts were given:

Dr. F. R. Blanchard, "The Doctor's Compensation;" Dr. Ralph Spencer, "The Doctor;" Dr. O. R. Long, "A United Profession;" Dr. A. T. Booth, "The Specialist;" Dr. R. B. Corbus, "Nerve and the Nerves;" Dr. J. J. Mersen, "The Medicine Man as a Moral Force;" Dr. F. C. Warnshuis, "The County Society and the Doctor."

The music furnished during the banquet was by the famous Silk City orchestra, composed entirely of ladies.

The toastmaster, Dr. R. W. Alton, of Portland, presided with fun-provoking gravity. After the banquet there was a visit to the silk mills, which we were pleased and astonished to learn were the largest of their kind in the world; one and a quarter million yards of silk fabrics in addition to thread and braid was last year's output. This is a Michigan industry that Michigan people know little of.

An unfortunate derailment on the P. M. Ry. prevented the larger part of the Montcalm delegation from reaching the meeting.

One plucky Grand Rapids doctor missing the early train started for Belding via G. R. & I. and P. M. through Howard City. When his train was stopped by the derailed freight he skipped out, walked over two miles to Greenville, hired a livery and drove in in time for the banquet, hungry and almost frozen, but happy to be in.

C. S. COPE,

Secretary Ionia County Medical Society.

Bay.

At the annual meeting, held December 14, 1908, the members of the society were the guests of the retiring president, Dr. T. A. Baird, at his residence. A sumptuous banquet was served, followed by routine business and the election of officers for the ensuing year 1909. Officers are as follows: President, Dr. W. R. Ballard, Bay City; Vice-President, Dr. R. C. Perkins, Bay City; Secretary, Dr. H. N. Bradley, Bay City; Treasurer, Dr. C. H. Baker, Bay City; Delegate to State Society, Dr. T. A. Baird; Alternate, Dr. J. C. Grosjean.

Our present membership (paid-up members) is less than at the close of last year on account, principally, of lapses for non-payment of dues. An effort will be made to get these men to pay up this year.

We made an attempt to secure a contract with the county for taking care of the poor in Districts No. 1 and 2, but were not given a show by the Poor Board. The men who hold the contracts are not members of the society, and apparently have more political pull. Will try again this year.

At the annual meeting the society members expressed themselves in favor of the Medical Defense League.

R. C. PERKINS, *Retiring Sec'y.*

Emmet.

At the annual meeting, which hereafter will be held the second Tuesday of December, the following officers were re-elected for 1909: President, L. W. Gardner, Harbor Springs; secretary-treasurer, G. W. Nihart, Petoskey.

G. W. NIHART, *Sec'y.*

Branch.

The annual meeting of the Branch County Medical Society was held at the Southern Michigan Hotel parlors in Coldwater, Tuesday, January 19, 1909. The meeting was well attended and every member seemed to take an active part in the program.

The scientific program contained papers by the local members.

The following papers were read and discussed:

1. The Treatment of Chronic Suppurative Inflammation of the Middle Ear, by Dr. W. A. Griffith, Coldwater.
2. Some Remedies and Their Indication in the

Treatment of Puerperal Eclampsia, by Dr. E. E. Hancock, Girard.

3. Clinical Significance of Indicanuria, by Dr. R. C. Whitmore.

The election of officers for 1909 resulted as follows:

President, A. G. Holbrook, Coldwater; Vice-President, E. E. Hancock, Girard; Secretary and Treasurer, Samuel Schultz, Coldwater. Delegates to the next annual state meeting, W. A. Griffith, Coldwater; E. E. Hancock, Girard. Alternates, A. G. Holbrook, Coldwater; S. R. Turner, Bronson.

At the completion of the regular program the members retired to the dining room and partook of a good supper.

The next meeting will be held in Bronson, the third Tuesday in April.

The year just closed was a prosperous one for Branch County Medical Society. There are twelve active members, two new members being admitted for 1909.

S. SCHULTZ, *Sec'y.*

Houghton.

At the annual meeting of the Houghton County Medical Society the following officers were elected: President, W. K. West, Painesdale; Vice-President, C. H. Rupprecht, Calumet; Secretary, John MacRae, Calumet.

JOHN MACRAE, *Sec'y.*

Huron.

The Huron County Medical Society held its regular quarterly meeting at Bad Axe January 11, 1909. Dr. W. J. Herrington read an interesting paper on "Intestinal Obstruction," which was thoroughly discussed.

The following resolutions were considered and adopted:

Moved by Dr. Herrington and seconded by Dr. Jackman—

Resolved, That the members of Huron County Medical Society are strongly in favor of a State Defense League.

It was moved by Dr. Conboy and seconded by Dr. Morden—

That the President of the Society appoint a committee of three to correspond with Senator Wm. Alden Smith and Congressman McMorran, urging the concentration of the different health bureaus into one department.

In accordance with the above resolutions Drs. Herrington, Friedlander and Conboy were appointed to act as such committee.

D. CONBOY, *Sec'y.*

Kalamazoo Academy.

On the 10th of December, the Academy held its annual meeting, at which Dr. R. E. Balch, of Kalamazoo, was elected President; Dr. Frederick Shillito, Kalamazoo, First Vice-President; Dr. O. M. Vaughan, Covert, Second Vice-President; Dr. J. H. Crosby, of Otsego, Third Vice-President; Dr. G. D. Carnes, of South Haven, and Dr. O. H. Clark, of Kalamazoo, were re-elected to the Board of Censors. Dr. J. C. Maxwell, of Paw Paw, and Dr. A. W. Crane, of Kalamazoo, were nominated as delegates to the State Medical Society, and Dr. B. A. Shepard, of Plainwell, and Dr. Herman Ostrander, of Kalamazoo, alternates.

Dr. J. Clarence Webster, of Chicago, gave a very interesting talk on "Some Clinical Experiences." He confined his remarks to Diseases of the Urinary Tract in Women. Dr. Robert H. Babcock, of Chicago, talked on "Chronic Infections in the Etiology of Myocardial Disease," speaking especially of the relationship between diseases of the gall bladder and myocardial affections. Dr. Russell H. Boggs and Dr. J. W. Boyce, of Pittsburg, Penna., spoke on "The Value of the Roentgen Rays in Thoracic Disease." Dr. P. M. Hickey, of Detroit, and Dr. Henry Hulst, of Grand Rapids, were present and took active part in the discussion of the papers.

In the evening, the members of the Academy and invited guests were entertained at dinner at the Michigan Asylum and following the banquet, Dr. A. I. Noble, of the Asylum, acted as toastmaster. Dr. C. E. Boys, of Kalamazoo, responded to the toast, "The Medical Profession, Then and Now." Dr. Paul T. Butler, of Kalamazoo, "The Doctor in Politics"; Hon. A. J. Mills, President of the Board of Trustees, was to respond to a toast, but was unable to be present. Many of the guests from the city and from away, as well as Mr. E. C. Adams, expert in legerdemain, assisted in making the evening one of the most enjoyable events the Academy has had for a number of years.

During the past month twelve new members have been taken into the Academy and the coming year gives promise of being a very prosperous one. Dr. M. Springer, of South Haven, has resigned from the Academy and has moved to

Charlevoix county. Dr. C. H. McKibbin, of Kalamazoo, who has been spending some months in California on account of illness has returned. Dr. W. H. Baldwin, of Kalamazoo, has resigned from the Academy and has moved to Coldwater, Mich. Dr. H. Hoover, of Alamo, has resigned and moved to Eaton county.

The regular January meeting of the Academy of Medicine was held on January 11th. Dr. D. M. Cowie, of Ann Arbor, gave a paper on "Some Clinical Experiences in Blood Pressure" and Dr. Walter den Bleyker, of Kalamazoo, read a paper on "Hypodermoclysis of Physiological Salt Solution." There were thirty physicians present. Dr. W. W. Lang, of Kalamazoo, Drs. George Cornish, of Lawton; C. A. Bartholomew, of Martin; W. P. Pope, of Lawrence, and L. J. Crum, of Richland, were elected to membership. The Academy has arranged a program for evening meetings every two weeks beside the regular monthly meetings in the afternoon.

G. F. INCH, *Sec'y.*

Kent.

Kent county has fallen into line and is broadening its scope by the adoption of the following amendment to its constitution:

"*Resolved*, That Article Three of our Constitution be so amended as to read, 'Every physician residing and practicing in Kent county and who is a legally registered practitioner of medicine and who is in good moral and professional standing, shall be eligible for membership.'"

Our Program Committee has arranged evenings for the appearance of the following noted men before our society this coming winter: Dr. Preston M. Hickey, Detroit; Dr. Chas. W. Hitchcock, Detroit; Dr. Darling, Ann Arbor; Dr. Wm. L. Ballanger, Chicago; Dr. Hewlett, Ann Arbor; Dr. Woods Hutchinson, New York City; Dr. Robbins, Detroit. The committee is still in correspondence with several other gentlemen whom we expect to be able to add to our program in addition to the above named.

Dr. W. T. Dodge, Councillor of the Eleventh District, Big Rapids, read a paper before our society on "The Elimination of Cavities in Bone Surgery" before a largely attended meeting on January 13th.

We are sorry to chronicle the commitment of one of our members, Dr. James Ardiel, to the Kalamazoo Asylum. The doctor's condition had

become such that it was not considered safe to allow him to remain unguarded.

We are now sending out our notice of meetings in the form of an eight-page printed bulletin, which contains the program for the coming meeting, committee reports, society notes and news, and rostrum of our committees. This bulletin is mailed to every physician in Kent county whether a member or not, and thus acts as a means of conveying to non-members the many good things they are missing by not being members. We will gladly add to our mailing list the name of any physician outside of our county, upon remitting 15 cents in stamps to cover postage for the year.

F. C. WARNSHUIS, *Sec'y.*

Mecosta.

A very interesting and enthusiastic meeting of the society was held at Big Rapids, January 5, 1909, which was largely attended. Much interest was manifested in the following program: "Some Evolutions in Therapeutics," Dr. L. S. Griswold; "Pneumonia," Dr. J. B. Campbell; "The Necessity of a Thorough Urinalysis," Dr. P. M. Fischer; "Clinical Case," Dr. G. McAllister; "Clinical Case," Dr. L. S. Griswold.

Dr. L. S. Griswold, Big Rapids, was elected delegate to the Kalamazoo meeting of the State Society and Dr. J. B. Campbell, of Stanwood, alternate.

DONALD MACINTYRE, *Sec'y.*

Muskegon-Oceana.

Although saddened at its close by the death of genial Dr. Bloch, the year just terminated has been one of the most successful in the history of this society. The committee on program and scientific work has thought best to continue for another year the plan of arrangements for meetings and papers which has been followed by the society during the year just passed.

That plan was as follows: Meetings every two weeks—alternating evening and afternoon. A paper shall be read at each meeting by a member of the society. One or two members shall previously be appointed to open the discussion. Meetings shall be held at the office or residence of the member reading the paper, if convenient for this to be done. Otherwise at some other suitable place.

It is not expected that anything extensive shall be provided by any member for entertainment of the society aside from the paper to be read.

It is expected that some social dinners shall be arranged in connection with some meetings. These, however, shall be arranged by the society and shall be arranged with the expectation that each member participating shall pay an equal share of the expense incurred.

Meetings shall be held with members as their names shall appear alphabetically, alternating first and last on the list as closely as this rule can be followed. One or two members have been omitted agreeable to that member's personal request. The alphabetical arrangement has been changed sufficiently to make the out of this city meetings come during the summer.

It is earnestly requested that each member select the subject for paper as early as possible and notify the secretary.

The schedule for meetings for 1909 is, therefore, as follows:

Jan. 8, at 8:30 p. m.—Dr. W. A. Campbell, Muskegon. Subject: "Convulsions in Infancy and Childhood." Discussion led by Drs. Geo. S. Williams, Jacob Oosting and L. I. Powers.

Jan. 22, at 4 p. m.—Dr. Geo. S. Williams, Muskegon.

Feb. 5, at 8:30 p. m.—Dr. V. A. Chapman, Muskegon.

Feb. 19, 4 p. m.—Dr. J. P. Sullivan, Muskegon.

March 5, at 8:30 p. m.—Dr. R. G. Cavanagh, Muskegon.

March 19, at 4 p. m.—Dr. A. A. Smith, Muskegon.

April 2, at 8:30 p. m.—Dr. J. T. Cramer, Muskegon.

April 16, at 4 p. m.—Dr. P. A. Quick, Muskegon.

April 30, at 8:30 p. m.—Dr. C. P. Donelson, Muskegon.

May 14, at 4 p. m.—Dr. L. T. Powers, Muskegon.

May 28, at 8:30 p. m.—Dr. B. T. Black, Holton.

June 11, at 8:30 p. m.—Dr. J. H. Nicholson, Hart.

June 25, at 8:30 p. m.—Dr. V. J. Blanchette, Walkerville.

July 9, at 8:30 p. m.—Dr. Chas. F. Smith, Whitehall.

July 23, at 8:30 p. m.—Dr. J. D. Buskirk, Shelby.

Aug. 6, at 8:30 p. m.—Dr. G. F. Lamb, Pentwater.

Sept. 3, at 8:30 p. m.—Dr. W. L. Griffin, Shelby.
 Sept. 17, at 8:30 p. m.—Dr. L. W. Keyes, Whitehall.

Oct. 1, at 4 p. m.—Dr. L. N. Eames, Muskegon.

Oct. 15, at 8:30 p. m.—Dr. Jacob Oosting, Muskegon.

Oct. 29, at 4 p. m.—Dr. F. W. Garber, Muskegon.

Nov. 12, at 8:30 p. m.—Dr. F. B. Marshall, Muskegon.

Nov. 26, at 4 p. m.—Dr. G. J. Hartman, Muskegon.

Dec. 10, at 8:30 p. m.—Dr. J. F. Denslow, Muskegon.

Through an error Dr. R. G. Olson's name was omitted from the list of physicians of Muskegon-Oceana County Medical Society Schedule for 1909. Dr. R. G. Olson, of Muskegon Heights, will read a paper at one of the fall meetings.

V. A. CHAPMAN, *Sec'y.*

Osceola-Lake.

The officers of the Osceola Lake Society for the following year are: President, U. D. Seidel, Reed City; Vice-President, J. H. Thomas, LeRoy; Secretary-Treasurer, D. S. Fleischhauer, Reed City; Delegate, A. Holm, LeRoy; Alternate, H. L. Foster, Reed City.

D. S. FLEISCHHAUER, *Sec'y.*

Sanilac.

The seventh annual meeting of the Sanilac County Society was held at Sandusky December 21, 1908, when the following were elected officers: President, Dr. George B. Tweedie, Sandusky; Vice-President, Dr. George Simenton, Marlette; Secretary-Treasurer, Dr. James W. Scott, Sandusky; Delegate to State Society, Dr. James A. Fraser, Lexington; Alternate, Dr. H. H. H. Learmont, Crosswell.

JAMES W. SCOTT, *Sec'y.*

Shiawassee.

At the annual meeting of the Shiawassee County Medical Society the following officers for the coming year were elected: President, Dr. A. L. Arnold, Owosso; Vice-President, Dr. Edwin Elliott, Chesaning; Secretary-Treasurer, Dr. R. C. Mahaney, Owosso; Delegate, Dr. W. E. Ward,

Owosso; Alternate, Dr. W. L. Parker, Corunna. Drs. George Sackrider, of Henderson, and Otis M. Cope, of Bancroft, were elected to membership.

C. McCORMICK, *Retiring Sec'y.*

St. Clair.

At the annual meeting held in December the following officers were elected: President, Dr. A. D. MacLaren; Vice-President, Dr. R. C. Fraser; Secretary-Treasurer, Dr. R. K. Wheeler. R. K. WHEELER, *Sec'y.*

News

Dr. H. Hoover, formerly of Alamo, is now located in Eagle.

Dr. H. F. Thomas, of Allegan, has been appointed by Governor Warner to fill a vacancy on the board of pardons.

Dr. R. L. Kennedy, superintendent of the State Hospital for Tuberculosis at Howell, has been granted a leave of absence for three months.

Dr. Gilbert P. Johnson, Detroit, sustained a scalp wound and severe bruises recently, as the result of colliding in his auto with a street car.

There is a movement on foot to rebuild Harper Hospital. Plans are under consideration for a modern, fire-proof, six-story structure, of 500 beds. Nearly a half million dollars have been pledged by a comparatively small number of individuals during the last two years, and it is expected that the total necessary amount can be obtained by active work by the committee of trustees.

The epidemic of scarlet fever which started in the University Hospital, Ann Arbor, last November, was quickly controlled by the vigorous quarantine, and the usual regime has been resumed.

Donald McDonald, a former clergyman, was found guilty by the Menominee court for practising medicine without a license on December 1; sentence was deferred.

In St. Louis, November 28, a "Tag Day" was held, during which \$21,874 was collected for the hospitals in the city.

The Nobel prize for medicine for 1908 is to be divided between Metchnikoff of Paris and Ehrlich of Frankfurt-am-Main.

Dr. Francis Jones has been appointed surgeon for the G. T. R. R. at Potterville, in the place of Dr. R. H. Locke, resigned.

Dr. G. E. Thomas, of Charlotte, has been appointed to the staff of army surgeons.

A "Tag Day" was held in San Francisco which netted \$28,101.52 to the fund for the Children's Hospital.

The foot-and-mouth disease is reported to have been epidemic in 49 localities in five counties of New York state. The disease has now been stamped out.

Dr. Flemming Carrow, Detroit, has returned from a trip to Missouri. He has practically recovered from the fracture of the foot which he sustained in November.

Dr. Robert McGregor, of Saginaw, has sailed for a visit to Australia and New Zealand.

Dr. Wadsworth Warren, Detroit, has been elected fleet surgeon of the Interlake Yachting Association; Dr. C. G. Jennings is delegate to the Yacht Racing Union.

The many Michigan friends of Dr. Otto Freer, of Chicago, will be glad to learn of his return from Europe and of the reception he met with from the colleagues abroad. He held clinics and gave demonstrations for his sub-mucous operation for nasal deflections in London, Edinburg, Copenhagen, Berlin, Freiberg, and Paris, to large and interested audiences. Prof. Killian, though a rival in this work, invited him to demonstrate his methods in his clinic at Freiberg. Dr. Freer's reception and the kindness shown him in the various medical centers of Europe should be a source of congratulation to honest, painstaking endeavor in this country.

Dr. Wilfrid Haughey, of Battle Creek, has given up general practice to devote his time to diseases of the eye, ear, nose and throat.

Dr. A. W. Crane, of Kalamazoo, was elected vice-president of the American Roentgen Ray Society at its last annual meeting.

The Michigan Society for the Study and Prevention of Tuberculosis will hold its annual meeting at the Hotel Pontchartrain, on Friday afternoon, February 26, 1909.

Deaths

Lewis E. Higbee, M. D., of Potterville, local surgeon to the Chicago & G. T. R. R., died at his home from cerebral hemorrhage, December 9, aged 62.

Dr. Lawrence Darling Knowles, for years one of the leading physicians of Three Rivers, died at his home December 29, 1908, of angina pectoris.

At the outbreak of the Spanish-American war he was recruiting surgeon for the Thirty-first Michigan, enlisting in that regiment with the rank of major. He was later promoted to be brigade surgeon, with the rank of lieutenant-colonel. At the time of his death he was a member of the state board of pension examiners.

Obituary

**John Gladwin Johnson, M. D.
1843-1908**

In the death of John Gladwin Johnson, which occurred December 31, 1908, the medical profession of Detroit lost a man who was polished, cultured and refined.

Dr. Johnson was born at Steubenville, Ohio, in April, 1843, and his early education was pursued at near-by schools. He graduated, when 20, from Washington and Jefferson College, and was then appointed, by Secretary of War Edwin M. Stanton, to a position in the War Department at Washington, which position he filled for some three or four years, in the meantime commencing his medical education, which was completed in Europe. After three years' residence in Heidelberg, he received his medical degree there, and then spent a year in study in Paris. Upon his return to this country he entered practice at Steubenville, Ohio, where he at first did much surgical practice, and here he married.

In 1872 he came to Detroit and practiced there until his death. After the death of his first wife he married Miss Parker, of Detroit, who survives him.

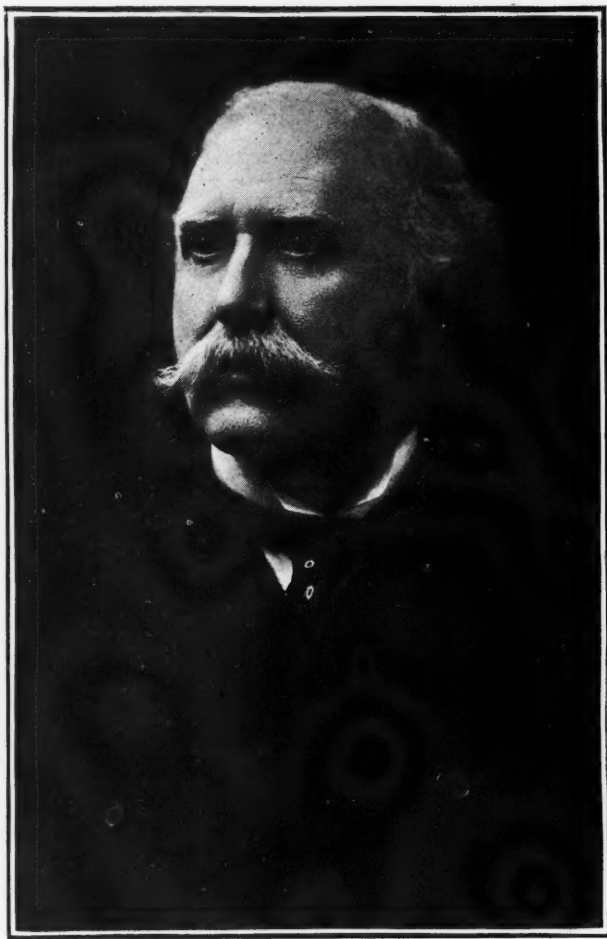
He was at one time Professor of Nervous and Mental Diseases in the Detroit Medical College, but teaching was distasteful to him and he was never free from embarrassment, so he said, in the class-room. His lectures, however, were those of a careful and polished student, who was thor-

U of M

oughly conversant with the subjects of which he spoke.

For over thirty-five years (since June, 1872) he was Attending Physician to St. Joseph's Retreat, now at Dearborn. His genial, helpful and accommodating spirit is warmly attested by one

played well upon the violin and delighted in evenings of music with his chosen friends. Though for some time in failing health, he persisted in keeping at his professional work which he so loved, to the very last. Up to the time of his death, he did a large obstetrical practice, and



John Gladwin Johnson, M. D.

1843 - 1908

who came into long contact with him in this service.

Dr. Johnson was of a modest and retiring disposition, which prompted him to cultivate the intimate society of a small coterie of chosen friends rather than mingle largely in a wider circle of acquaintances. His tastes were cultured and refined, and he was decidedly of an artistic temperament. An enthusiastic musician, he

it is said that he never lost a mother in confinement.

His ideals and standards were high, his integrity of character beyond reproach. There has gone from us one who was thoroughly well-educated, of natural refinement, of that type of which we never have too many—the high-minded Christian gentleman.

C. W. HITCHCOCK.

Sigmund Bloch, M. D.
1846-1908

Dr. Sigmund Bloch, one of the most prominent and highly respected physicians of Muskegon, died, after an illness of two weeks' duration, on December 20, 1908.

Dr. Bloch was born at Pilsen, Bohemia, June 7, 1846; was educated for nine years at a monastery, later attending the gymnasium in Vienna. He then spent two years at literary studies at the University of Prague. The son and the grandson of a physician, he decided to take up medicine and received his medical training at the University of Vienna, with a year of hospital work at the Allgemeines Krankenhaus. He then served his military period in the Sanitary Corps and saw active service in the Prussian war. He came to America in 1880 and, after a short stay in New York city, settled in Muskegon.

Muskegon was at that time in the height of its lumber era, which meant a large foreign population employed in the mills. Many families then here were so recently come to this land that they could not speak their new-found language. On this account in particular, Dr. Bloch, with his fine linguistic command, was more or less of a godsend. To him they could pour out their woes in the freedom of their mother language, while he in turn took away much of the terrors of their American speechlessness.

No one knows how far his command as a linguist went. He spoke German of course, French, the Scandinavian tongues, Spanish, and their allied languages. As a student in Greek and Hebrew, he was equally at home.

Aside from the regular path of his profession Dr. Bloch was also deeply interested in public welfare. It is to him in particular that Muskegon owes its pure Lake Michigan water, on which so greatly the good health of this city depends. As a member of the common council at that time, he was chairman of the committee on water. The battle that it became necessary to wage was a long and difficult one, but he fought it earnestly, and finally succeeded with others in carrying the project through to success.

Dr. Bloch married Mrs. Nellie S. Weller, of Muskegon, on August 28, 1893, at Charles City, Iowa. She alone survives him here. In Bohemia he leaves a sister, Mrs. Charlotte Weis, who lives in their native town in Pilsen.

The deceased was an enthusiastic member of the Muskegon-Oceana Medical Society and will be sadly missed at its meetings.

DERMATOLOGICAL "DON'TS."

Don't be too hasty in a positive diagnosis, certainly not from inspecting any single portion of an eruption; many a cutaneous disorder will present very different appearances in different localities.

Don't fail to examine each and every part affected, both for diagnostic and therapeutic purposes.

Don't forget that a patient may have several entirely distinct and different diseases of the skin at the same time, one of which may mask the other and confuse the diagnosis.

Don't forget to get and keep a full written history of every case, recording symptoms at each visit, with the effect of remedies, and abbreviated copies of prescriptions given.

Don't fail to use a magnifying glass in observing and studying all lesions on the skin, however good the vision may be; it demonstrates details in eruptions which the naked eye overlooks.

Don't lose sight of the value of the microscope when there is any suspicion of a vegetable parasitic disease.

Don't forget that syphilis is a great imitator of many diseases of various organs, and that in most dermatological statistics it forms about one-tenth of all cases.

Don't fail to establish the fact clearly whether syphilis has or has not anything to do with the special case under consideration.

Don't exclude syphilis simply because of the absence of a venereal history, if the character of the eruption and sufficient history and other symptoms corroborate it.

Don't ignore the fact of the relative frequency of "syphilis in the innocent," and don't fail to search for the present or past point of entrance of the poison by means of an extra-genital chancre, when other explanation is absent.

Don't forget that the urine affords an index as to how the metabolic processes are performed; also that while there may be no albumin, casts, or sugar found in it, its chemical constitution may be far from normal and indicate great metabolic errors which should be corrected.

Don't forget, in cases which are at all doubtful, to use the analytical method of diagnosis, noting down any and all eruptions which might look like the one under consideration, and then by a process of exclusion, eliminate one after the other, until the one is found which answers all or most of the requirements.—*Bulkley.*



Progress of Medical Science

MEDICINE.

Conducted by

T. B. COOLEY, M. D.

Roemer's Antipneumococcus Serum.—MONTI describes 12 cases of croupus pneumonia treated with Roemer's serum, which seems to differ from its predecessors chiefly in being a mixture of sera from animals of different species; with the purpose of having as many different varieties of immune bodies as possible. It is given in doses of 20 to 40 c. c. The cases were all typical, and without complications. No other treatment than the serum was used. Favorable effects were noted in all as follows:

1. Under the administration of the serum, crisis and resolution occurred in all cases—in 3 on the second day, in 6 on the third, and in 3 on the fourth. While no normal time can be set for the occurrence of the crisis, it is remarkable that it should have been before the fifth day in every case.

2. In every case there was after the injections a striking lessening of dyspnea and improvement in general condition, such as MONTI has not observed with any other method of treatment.

3. The influence of the serum on the temperature depends on the proportion of the dose given to the severity of the case. If the dose be proportionately too small, it may have no effect, and further injections will be needed to influence the temperature and the local process. It seems probable that one large dose at the onset, or several small doses in the first 12 hours, might produce results more quickly than the method followed in these cases. Abortion of the pneumonic process did not occur in any case. The injections were always well borne, and produced no unpleasant results.—*Arch. f. Kinderheilkunde*, Vol. 47, p. 45.

Internal Use of Tuberculin.—MOELLER often finds it desirable to give tuberculin, whether for diagnostic or therapeutic purposes, in some other way than by hypodermic injections or local application. This may be on account of the sensitiveness of the patient, or circumstances which render it more convenient that he administer the drug himself. After experimenting with various methods of administration by the alimentary tract, MOELLER has found capsules of "Gelodurat"—an elastic substance wholly unattacked by the gastric juice, but soluble in the small intestine—

to be wholly satisfactory. The mixture he uses for therapeutic purposes in these capsules he calls "Tuberoïd." It consists of tubercle emulsion, "Timothein"—a product of the timothy bacillus which is said to give rise to the same reactions as tuberculin, but in a milder form—and calcium formate, which is added on account of the stimulating properties of the formic acid, and the increased fibrin formation from the administration of calcium. MOELLER claims that diagnostic reactions and therapeutic effects are fully as satisfactory with this form of administration as with injections.—*Munch. med. Wochens.*, Nov. 10, 1908.

Relation of Avian to Mammalian Tuberculosis.—MAX KOCH and L. ROBINOWITZ have made an exhaustive study of avian tuberculosis in the birds at the Berlin Zoological Garden. They conclude that the avian form of bacillus is a modification of the family of tubercle bacilli which has become adapted to the species from an origin common to it and the mammalian forms. They show that tubercle is very common in birds, and that all of the different orders and species may become infected with it. The lesions are in the abdominal organs and lungs, and are analogous to the caseous process in animals. Infection is commonly by means of food, but may be by inoculation by beak or claws, and occasionally by inhalation. Interesting evidence is offered in favor of congenital infection. In the Zoological Gardens infection is commonly carried by rats and mice. In the Garden birds only 3 were found to be infected with bacilli of the human type, but all gradations were found, from the typical avian to the true bovine form. In one case repeated passage of avian bacilli obtained from a parrot through guinea pigs led to the appearance of bacilli resembling the human type. Spontaneous and artificial infection of rats and mice with avian bacilli was frequently observed. Goats and cattle were also found to be susceptible to the bird type. On the other hand, hens and the birds of prey were not susceptible to mammalian forms of bacilli except indirectly through infecting the egg.—*Suppl. Virchow's Arch. Abs. Brit. Med. Jour.*, Nov. 14, 1909.

SURGERY.

Conducted by

C. S. OAKMAN, M. D.

Newer Conceptions of Operative Technic in Cleft-Palate and Harelip.—Many operators believe, with Arbuthnot Lane, that early operation is preferable for cleft-palate, because the baby weighs relatively more just after birth, resistance has not been decreased by mouth breathing, digestion is unimpaired as yet by difficulties of feeding, the bones are softer, sensation of pain is not acute, wrong habits of articulation have not been acquired, palatal muscles and nasopharynx develop better, the nose attains a more normal shape. The danger from hemorrhage is slight, and the author believes there is no truth in the tradition that infants do not bear hemorrhage well. As to the advisability of repairing a harelip at the same operation, EASTMAN argues in favor of it, for the following reasons: The soft parts removed from the lip may help to complete the palatal defect; the chances of union are better than at a later period; the pressure of the sutured lip assists in the restoration of the premaxilla and the closure of the cleft-palate. Lane and Sherman uphold these arguments, but Brophy postpones the repair of the lip until the palate is completely closed.

The best position for the patient for operation is the dorsal, with head extended over the edge of the table or over a pillow; a suitable gag must be used, such as that of Lane. Denudation of the edges must be thoroughly done, with bevel on the nasal side; the mucous membrane, together with the periosteum, should be separated carefully from the hard palate; if the arch is high and narrow, the flaps thus made will fall together easily; if the arch is low and wide, it may be necessary to make lateral incisions parallel with the suture line, in order to avoid too great tension; these incisions can be packed with gauze, to act as a support. The author prefers small caliber chromic catgut as suture material, and does not advocate the attempt to provide a mucous covering above as well as below. He approves of Brophy's method in cases of complete cleft, and lays stress on the fact that no single procedure will ever be applicable to all cases.

In after-treatment it is recommended that infants be fed for the first two days by rectal enemata, and after that, sterile milk by mouth.

The author also describes in detail the recent advances in the surgical treatment of hare-lip. The whole article is profusely illustrated.—*Annals of Surgery*, January, 1909.

The Question of Diagnosis in the Case of a Patient Complaining of Indigestion.—AGNES VIETOR classifies the symptoms that the laity attribute to indigestion; first, there is the discomfort due to sensation, manifested as local feelings of fatigue, heaviness, pressure, distention, dragging, aching, pain of various kinds—dull, sharp, intermittent, constant—burning, emptiness, or nausea. These all may be differently influenced by eating and drinking. Second, the discomfort may be one of action, manifested by silent or noisy peristalsis, eructations, regurgitation, or vomiting.

These two groups of phenomena—sensory and motor—have always been interpreted by the laity as indigestion, and likewise often by physicians. This diagnosis has naturally led to therapeutic effort in the line of modifying the digestive function or the food ingested. This is usually unsatisfactory, and the explanation is found in the great variety of pathological conditions giving rise to these symptoms. In seeking for a more definite diagnosis, all the possibilities must be remembered; there are extra-abdominal conditions that may be the cause, such as tuberculosis, tabes, non-pancreatic diabetes, anemia, toxemia, arteriosclerosis, and lesions of the pelvic, thoracic, cerebral, or peripheral sense organs; there are lesions of organs lying in the abdomen, but outside of the epigastrium, such as displacements, affections of the small and large intestines, cecum, appendix, etc., there are conditions of the abdominal wall, such as atony, pendulousness, hernia, diastasis of muscles, tumors, etc. If all the above conditions can be excluded, it remains to seek the cause in the middle trunk zone; the possibilities to be considered are, the various displacements of the stomach, gall-bladder, and kidneys, with or without adhesions; these displacements produce all grades of traction, kinking, and torsion, interfering not only with the physiological competence of these organs, but also altering the nervous, vascular, and lymphatic relations may have the effect of changing secretions, obstructing or dilating cavities and canals, producing congestion, trophic changes, atony, ulceration, etc. The presence of an incompetent abdominal wall, VIETOR thinks, is indicative of visceral displacement, and her observations lead her to believe it is the beginning of many ills.—*Surg. Gyn. and Obst.*, January, 1909.

PHARMACOLOGY AND THERAPEUTICS.

Conducted by

H. A. FREUND, M. D.

The Action of Arsenic on Red Corpuscles.—

GUNN contributes an interesting number of conclusions on the action of arsenic on the red blood corpuscles. Various authors have come to the conclusion that, because arsenic seems to have no direct effect in increasing the production of red blood cells, its beneficial results must come from its specific action on the parasites of the disease for which it is given. In a series of experiments in which the author has mixed arsenic in a suspension of blood corpuscles, arsenious acid becomes fixed to the red blood cells. This process takes place rapidly, and furthermore protects the erythrocytes against the hemolytic action of distilled water. He believes that the arsenic in some way affects the stroma of the red cells in the hemoglobin, but as this stroma is known to contain lecithin and cholesterol, he believes that these two substances should be given a thorough trial in every case of pernicious anaemia. This is especially so, he believes, because we have no single drug to actively combat that disease with. —*British Medical Journal*, December, 1908.

The Treatment of Diphtheritic Paralysis.—

ROLLESTON, speaking of the treatment of diphtheritic paralysis, insists that prophylaxis is of the utmost importance and should be attempted by rest in bed in the recumbent position for periods varying from three weeks after a mild angina to seven or eight weeks after a severe primary attack. If no paralysis has developed by the end of the seventh week, the patient may safely be allowed to sit up, and in a few days to leave his bed. The persistence of slight ocular or palatal palsy after that date does not contraindicate the patient sitting up, provided the diaphragm and pharynx are unaffected.

Cardiac dilatation and arrhythmia are sometimes very persistent after diphtheria, but, in the absence of other contraindications, no useful purpose results by keeping such patients in bed beyond the eighth week.

The author recommends the employment of adrenalin as a prophylactic against cardiac paralysis. He uses it to the entire exclusion almost of other drugs, especially during the acute stage. The best results are obtained by giving 10 minims every two hours during the first ten days. The symptoms of suprarenal insufficiency, manifested, according to ROLLESTON, clinically by arterial hypotension and neuromuscular asthenia, and anatomically by cloudy swelling, necrosis and hemorrhage justify the use of this substance.

On the occurrence of vomiting, associated with

cardiac paralysis, mouth feeding should be discontinued, and nutrient enemata, each containing 20 minims of adrenalin, should be given every four hours. The employment of large doses of tincture of belladonna in alternate nutrients with 30 grains of potassium bromide will act sometimes where adrenalin fails.

Owing to concurrent anesthesia of the larynx and the resulting accidents that are possible rectal feeding is recommended during pharyngeal paralysis. It can be readily employed, as paresis of the throat is of short duration usually. Thirst can thus be always readily relieved by giving 6 ounces of water twice in 24 hours while pharyngeal paralysis lasts, or if very severe the foot of the bed should be well elevated so that mucus will drain out through the nose and mouth.

The author is inclined finally to the belief, owing to the failure of diphtheritic paralysis to improve more rapidly after the administration of antitoxin, as Comby recommends, that the success ascribed to it by some comes from a psychotherapeutic rather than a specific action. —*Practitioner*, London, January, 1909.

Experimental Basis for the Use of Bromides.

—Some recent investigations on this subject have given valuable data to guide us in the administration of the bromides. Wyss has shown that they accumulate in the tissues to the complete exclusion of the chlorides in time. Animals become atactic and at times develop a fatal paresis. Chlorides, however, administered at the last moment will quickly restore them. The author here gives reasons for believing that chlorides are essential to the functioning of the motor nerves.

Wyss believes that an abnormally high concentration of bromides in the blood can be prevented by maintenance of chlorides in the system. Still he finds that clinically the value of the bromides in such conditions as epilepsy depends on the reduction of the amount of chlorides and the retention of the bromide ions. Thus by the generous and continued administration of the bromides, together with a salt-free diet, approaches the end desired. This may be dangerous except in urgent cases.

The author thinks that the hypnotic effect of the bromides is much exaggerated, so that they are contraindicated in all mental and psychical conditions, like neurasthenia and hysteria. They are here injurious to a metabolism that usually requires assistance. —*Medizinische Klinik*, Nov. 22, 1908.

PATHOLOGY AND BACTERIOLOGY.

Conducted by

C. E. SIMPSON, M. D.

The Nature of the Cancerous Process.—

PARK's article, as is to be expected from his earlier writings, is a strong argument in favor of considering cancer as an infectious parasitic disease. As long as 250 years ago Tulpus, the Dutch anatomist, made this statement, "Cancer is just as contagious as inflammation of the eyes." Junker in 1731 maintained that cancer was contagious and Harvey the Great wrote that tumors strongly resembled parasitic productions in the vegetable kingdom. Present-day observers have been too content to rest with the statement of Virchow that carcinoma is an epithelial neoplasm whose component cells are not conforming themselves to normal habits or appearances. Around this various theories have been built but, PARK insists their building has been directed too much by laboratory workers, who study mainly the terminal condition. No observing clinician can fail to note the evidences of infectivity.

The principal reasons for believing in the infectivity of cancer are from both the clinical and the experimental side.

I. Clinical.

1. Direct transmission from a diseased to a previously healthy surface, as from lip to lip, or during operation.

2. Cancer à deux, as from wife to husband, or from patient to laundress.

3. Cancer houses, where numerous and successive cancer cases have appeared.

4. The epidemic appearance of cancer within limited regions.

5. Metastases.

II. Experimental.

1. The analogy that exists in the vegetable kingdom between the xiomata and other tumors of trees and plants and the production of innocent growths, benign tumors, *i. e.*, galls, well known to be the result of extrinsic irritations.

2. Epidemic appearances of cancer among animals, such for example as the occurrence of sarcomata in previously healthy rats which were placed in cages in which rats with sarcomatous tumors had been kept.

3. The actual transmission between animals of the same species of unmistakably malignant tumors. Prominent among experimenters in this field is Lœb, who transplanted tumors from one animal to another and determined that the transplanted tumors grow from transplanted cells. Further work was undertaken by the New York State Laboratory, especially on the question of immunity from cancer. From this laboratory Gaylord and Clowes announced that a considerable percent of animals recover spontaneously

from inoculation tumors, that they are then immune and that their blood exerts an immunizing effect on animals into which it is injected.

4. Occasional successful causation of tumors by injection into animals of human products. Though these experiments have rarely succeeded those which have been successful must be considered.

5. The general behaviour of the disease, namely its resemblance to other known infectious conditions with its reactions to certain serums, its tendency to hemolysis, its behavior to transfusion, etc. In this connection may be noted the observation of some American workers that the blood of immune dogs can be employed as a transfusion therapeutically. Ewing, Beebe, and Crile were able in this way to cure a large number of animals.

6. The same tendency to metastasis, with the same explanation as occurs in every other infection.

7. The practically complete demonstration that in animals it is an infectious disease and the unavoidable inference that if it be so in them it must also be in man.

To PARK the contagiousness of cancer is proved, indeed he makes the statement that its contagiousness is put beyond the pale of doubt.

It has been impossible to fully carry out Koch's law in regard to the proof of infectivity, for the reason that the parasite has not been cultivated and the disease is not capable of transmission outside of the species in which it originates. To overcome this latter difficulty PARK advocates using condemned criminals in experimental work. The same condition obtains in our knowledge of scarlatina, measles, and smallpox, yet we unhesitatingly pronounce them infectious.

Absolutely healthy tissues are almost if not quite immune from cancer parasites. If tissue decay occur in excess of repair, especially if accompanied by irritation, traumatism, or inherited susceptibility, then conditions favor the development of cancer. The parasites seem to be omnipresent. Raw foods constitute a source of possible infection.

Cancer, then, says PARK, is to be regarded as a specific disease, intensely infectious to the individual. It must be treated by observing the most efficient cleanliness, including the thorough disinfection of houses inhabited by cancer patients. Until some specific symptom of cancer be found and a method of influencing the parasitic growth and destroying the germ, thorough surgical removal is our only hope.—*Surgery, Gynecology, and Obstetrics*, November, 1908.

NEUROLOGY.

Conducted by

C. W. HITCHCOCK, M. D.

The Origin of the Facial Nerve.—A case of neuritis of the facial and auditory nerves in the internal auditory meatus has furnished BRUCE and PIRIE the opportunity of investigating this nerve, about the origin of which there has been so much controversy.

They reach the following conclusions:

1. That the upper facial nerve does not arise from the oculomotor nucleus.

2. That the lip-facial fibres do not arise from the hypoglossal nucleus.

3. That there is no crossed origin of the facial nerve from the main nucleus.

4. That no crossed origin for any of the fibres has yet been discovered.

5. That all the fibres of the facial nerve arise from the groups of cells in the pons which lie behind the superior olive, and are known generally as its main nucleus—these groups being regarded as including the small accessory group situated a little behind it (Wyrubow), i.e., nearer to the abducens nucleus.

6. That the upper facial nerve probably arises from the dorsal part of the nucleus.

7. That further localization of function of the nucleus has not yet been clearly established.—*Review of Neurology and Psychiatry* for December, 1908.

Delayed Apoplexy.—The literature of experimental and pathological apoplexy is reviewed, particularly as to the changes which take place in those conditions in which the evidence of apoplexy are first seen some time after the injury. A case of Spiller's is reported and the following conclusions reached from its study:

"(a) Traumatic delayed apoplexy (Spätapoplexie), in the sense of the original Greek is in all probability, an entity.

(b) Delayed apoplexy is not of necessity a condition in which hemorrhage takes place, but the stroke can have as its immediate etiological factor the occluding or thrombosis of one or more arteries.

(c) The cerebro-spinal fluid does not play a necessary part in the production of delayed apoplexy, and injury to the region of the aqueduct and fourth ventricle is a collateral circumstance of no etiological moment.

(d) In cases of delayed apoplexy in which hemorrhage takes place, the hemorrhage is not necessarily preceded by a process of necrotic

softening about the artery in question, this removing the outside support (Widerstandsfähigkeit), but the artery itself is injured as Langerhans holds, and the secondary rise in arterial pressure, or the normal pressure causes the hemorrhage.

(e) The mechanics of many cases of delayed apoplexy is as follows: The trauma to the head causes a mechanical agitation to the brain substance, which falls with greatest severity on the arteries, small and large, they being filled with an incompressible fluid. The particular location of the chief action on the vessels cannot be determined by the external impact of the blow or the direction of the force and is impossible of determination until revealed by symptomatology. At first there is in all probability a general vasomotor constriction of the cerebral arterial system followed very shortly by a paresis of the vessel walls. The vessels particularly injured undergo endothelial proliferation, and thrombotic processes are set up. Then occlusion, if in a functionally important area of the brain, can cause an apoplectic attack. To this class belongs my case.

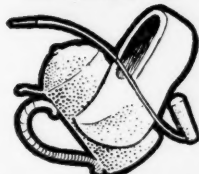
In considering a case of what may be traumatic delayed apoplexy, a possible incompetence on the part of the kidney must be borne in mind and the action of a consequent uremia must be given full weight. The case I report had a slight amount of chronic interstitial nephritis and had she not come to necropsy one could not have positively stated whether there was a hemorrhagic or thrombotic condition on the one hand, or a uremic attack."—ALFRED REGINALD ALLEN, in *Journal of Nervous and Mental Diseases* for December, 1908.

Facial Spasm Treated by Injections of Alcohol.—PATRICK proposes this new treatment for tic convulsif of the face, and reports three cases with relief of spasm in two cases. He used a long hypodermic needle, injecting the alcohol (of 7% strength in one case and of 40% in the others) just in front of the mastoid process, the object being to reach the nerve at its exit from the stylo-mastoid foramen.

In the case of failure, the nerve was not reached. In the other two, the results were ideal, no facial paralysis of any account persisting.—*Journal of Nervous and Mental Diseases* for January, 1909.

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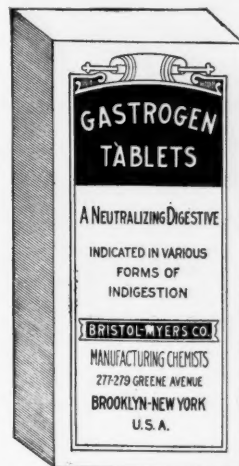
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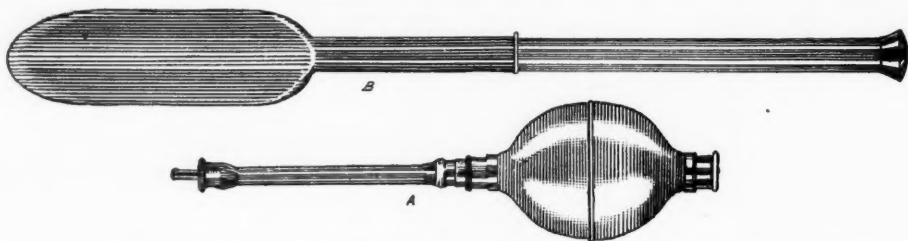
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